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# VENTURE CAPITAL ECOSYSTEM AND ITS CONTRIBUTION IN THE HIGH TECH INDUSTRY. AN EMPIRICAL ANALYSIS OF THE SOFTBANK INVESTMENT VEHICLE: THE VISION FUND.

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## INTRODUCTION

Venture capital firms are primarily known as financing investors of new ventures with high growth potential, generally operating in high tech related industries. However, the roles played by VC funds is not limited to the provision of capital. They also contribute some *added value* embodied in the competences, professionality and relational network. These resources, as well as the cash received, would have been otherwise inaccessible for innovative entrepreneurs. In a sense, they are responsible for the survival and the development of newly established firms. For this reason VC firms are defined by many as *innovation financiers*. In terms of economic progress, their support in the creation of new techniques and innovative services and products has positive spillovers on the productivity of the whole industrial system. The complexity of their operations requires an articulated business model, characterized by several and well defined steps. This dissertation aims to provide a general overview about the functioning of VC firms and their relationship with high tech startups, which today is embodied in multi-millionaire deals between these two parties.

The study starts from the investigation of VC business model, the analysis of which is considered to be absolutely necessary for the realization of the ultimate goal of this research. In particular, the perspective of a Venture Capital Cycle designed by Gompers and Lerner is embraced as explanatory model of VC activity. According to this view, VC business model is better explained through their involvement in all the steps of the financing process. It starts with the fundraising event, then it follows the proper investment phase and the monitoring activity, ending with the exit of the VC fund from the portfolio company.

The second chapter proceeds with the analysis of the other side involved in the VC financing process, namely high tech startups. Their rise, occurred in the last decades, is reviewed together with their peculiarities. The analysis highlights the challenges these businesses face, defined in terms of knowledge and financing gap. With regard to these issues, the role of VC firms is particularly enhanced, being their capital injections and the other activities performed of incredible support in overcoming them. Indeed, the financing provided by VC firms is often the only source of capital available for high tech new ventures. Their being innovative is what prevents them from receiving traditional forms of capital, such as debt. For this reason, they apply the so called Revised Pecking Order Theory, being equity their primary source of capital. Therefore, the role played by VC funds for high tech startups' growth is considered crucial. Empirically, VC involvement explains a major part of high tech startups' development. However, a lot has been written about

the theoretical determinants of growth in these type of businesses. Over the last decades, several theoretical frameworks have been developed with the aim of identify which factors interact in their expansion process. A specific type of high tech startup is then introduced, the *unicorns*. VC firms provide massive amount of cash to these billion-valued startups and all the companies analyzed in this study are unicorns; their analysis is therefore necessary.

The third chapter is dedicated to the literature review of the role played by VC in high tech startups, with the explication of all the activities and determinants of the already mentioned *added value* that distinguishes VC operations. This value is provided in the form of solution to market frictions such as adverse selection and moral hazard, coaching activity and the certification effect that being backed by a VC firm implicates. Moreover, a stream of literature regarding the implications of the value contributed by VC in high tech startup performance is revised.

Finally, the last chapter is intended to provide an empirical analysis of the VC phenomenon, based on the most important VC in the world: the Vision Fund. This latter is the investment vehicle of the Japanese giant Softbank and has dominated the scene of VC in the last years. Softbank is well known for the terrific returns registered with its early investment in Alibaba back in 2000. Its unique way of conducting deals has disrupted VC industry reshaping the rules of the game. This final chapter is aimed at the critical assessment of the fund's business model and investment strategy, performed through the analysis of three companies backed by the Vision Fund. These were specifically chosen because their disappointing performance on the market have casted doubts about Softbank's much praised investment strategy.

The research methodology applied refers to both literature and empirical materials. The conclusions achieved are intended to make a step forward in the evidence about the relationship between VC firms and high tech startups. The strategy applied by the most important VC firm in the world with respect to three of its portfolio companies is analyzed, in order to critically find its points of weakness. Lastly, some considerations about the trends which are believed to dominate the VC market in the foreseeable future are drawn.

# CHAPTER 1: Venture Capital business model

## 1.1 Introductory notes on VC activity

Venture Capital is commonly defined as a form of financing that investors provide to new ventures, mainly tech focused, characterized by long term growth potential in exchange for a minority equity stake. A widely accepted definition is not yet diffused, as it varies along with nations and their financial and economic systems. This allows us to identify several definitions. According to the American one, VC is a form of private equity dedicated to newly established businesses, so it differs from private equity that instead intervenes in the steady and mature stage of companies. Nevertheless, they pursue the same goal: to increase the value of the companies they invest in, in order to later sell them at a profit. Venture Capital (VC thereafter) is a major subgroup of the wider private equity market, whose roots can be traced back in the 19$^{th}$ century. However, VC industry developed properly only after the II World War, when Georges Doriot, considered to be the father of venture capitalism, founded the American Research and Development Corporation (ARDC) together with Ralph Flanders and Karl Compton. They created the first institutional private equity fund with sources other than wealthy families. They are also credited with the first major venture capital success when they invested $70,000 in 1957 in the DEC company. This investment resulted in a $35.5 million gain when the company went public in 1968, representing a 101% annualized rate of return. Professionally managed VC firms' diffusion was favored in the United States by the Small Business Investment Act issued in 1958; this regulatory act allowed the VC model to spread as the main financing method for entrepreneurial initiatives and projects. In the period between 1960 and 1980VC firms' role was particularly enhanced by the Silicon Valley phenomenon, when they began to invest in starting and expanding companies. Their financing solutions fueled the growth of semiconductor and computer companies, which started from the ground achieving astonishing economic performance and growth. As the dot com bubble burst in 2000, VC firms suffered major losses given their financial involvement in the companies going out of business. Their damage was also reputational, since they were accused of unsophisticated financial models, inflated valuation and lack of investor perspective. The years between 2003 and 2007 are defined as the golden age for private equity: low interest rates, regulatory changes for public companies and higher elasticity in obtaining funding were the main reason of VC great expansion. However, the global economic crisis that immediately followed drained all the liquidity. Today, VC industry is rising again with the record set in 2018 of $255 billion invested globally.

## 1.2 Venture Capital cycle

It is necessary to make some considerations about VC funds' structure and organization in order to completely understand their business model. VC are financial intermediaries, thus they manage other party's money investing in the so called portfolio companies. Subjects acting in the venture capital process are three: investors, venture capitalists and entrepreneurs. The first two represent the supply side of the VC process while the entrepreneur represents the demand side. Therefore, venture capitalists serve both as supplier of capital to entrepreneurs and seeker of capital for investors. In U.S. and UK, VC firms are organized according to the Limited Partnership (LP) structure. Limited Partnership consists in a close-end fund, in which investors deploy money that are designated, for a predetermined period of time, to the investment decisions that the VC firms will make. The subjects involved in a LP are two: General Partners (GP), the venture capitalists and Limited Partners (LP), the investors providing the VC money to invest. The figure of LP is embodied by a variety of financial institutions such as pensions funds, foundations, insurance companies, high net-worth families and individuals. The wealth collected is managed and invested by GP, which have a fiduciary responsibility to their LP.

It is worth mentioning that the support provided by Venture Capital firms does not only concern financial aspects. They sit alongside entrepreneurs and assist them in managing risks; they are usually specialized in one or few industries so they have deep knowledge of the sector in which they are investing and this allows them to also play mentoring roles.
The VC firms' activity is commonly considered to be better explained by the Venture Capital Cycle, designed by Gompers and Lerner.[1] They describe the role played by VC through a financial perspective, following their involvement in all the steps of their investment. It starts with the fundraising event, then it follows the proper investment phase and the monitoring activity, ending with the exit of the VC from the company. This approach is considered to be the most efficient in describing VC's activity because it is not affected by peculiar investor's or company's features, analyzing the VC phenomenon at a general level. In this chapter each step of the VC cycle will be analyzed.

[1] P.A. Gompers, J. Lerner, (2004), "The Venture Capital Cycle", 2nd Edition, MIT Press, Cambridge

### 1.2.1 The fundraising activity

Fundraising represents the first step of the VC cycle described by Gompers and Lerner. It consists in the collection of money from the ed Limited Partners. The VC firms firstly searches for investors, using an investment proposal in order to explain some main aspects, such as the investment horizon, the vehicle used to invest the money, the type of investment, the target market and the returns for investors. All this information are enclosed in the so called information memorandum, which is the main instrument used to deal with the moral hazard phenomenon. This naturally emerges in situations in which one party is in possession of better quality information than the counterpart. The fundraising process is anticipated by a preliminary definition of some aspects reported below:[2]

1) The choice and determination of the vehicle through which the VC fund will make the investments;
2) Identification of the criteria that the VC follows in its investment decisions, as the country of interest, the sectors, the companies and their stage (seed, start-up and expanding financing);
3) Determination of contractual relationship between the VC fund and investors;
4) Determination of investment policy, leverage, optimization strategies;
5) Drafting of the code of ethics that will guide every action and relationship between the fund, the investors and other parties.

The phase of fundraising is particularly important because fundamental decisions about investment strategy are taken in this step. For instance, it is crucial to define the target companies. Usually some factors are considered when selecting target companies, such as: the country in which they operate, the target market, the availability of data and information about the companies, the lifecycle stage in which companies lie. In the selection of the target company these factors are considered, together with the economic and financial situation of the same. Also the stage in which the VC firm will intervene is a critical decision to take: investors typically prefer to mandate VC firms that are specialized in a given stage financing (seed, start-up and expanding). The reason behind it is that each lifecycle stage has its own peculiarities. For this reason a VC firm with strong competences and specialization on a specific stage is considered to be the best option for both the company and investors. The fact that the preferred businesses' lifecycle stage is determined during the fundraising phase may seem inappropriate; however, the investment risk profile depends upon

[2] Gervasoni, Sattin, (2008), "Private Equity e Venture Capital", pp. 189

it, therefore it is necessary to establish it in advance in order to enable investors to take weighted investment decisions. During the fundraising phase the basis of the relationship between VC firm and investors is set. It is crucial to establish a relationship based on transparency in order to limit moral hazard costs and related inefficiencies. In this perspective, the sharing of established informative and comprehensive documentation is considered to be beneficial for the relationship between VC firms and investors. The documentation most frequently sent to investors in this phase and more in general during the entire investment period consists of: report in which the VC firms' structure, investment strategy and the general trend of the fund are described; report describing the fundraising development as well as any change in the management of the VC firm; report dedicated to the IRR periodic trend; latest news of the markets in which the fund is investing. The preliminary stage of the fundraising process is concluded with submission to the investors' attention of a formalized proposal. In this sense, the identification of the right investor category is crucial. As outlined by Gompers and Lerner, the fundraising strategy followed by VC firms varies whether the fund has a long and successful track of record. In case of a newly established VC fund, it will suffer from the lack of reputational benefits incurring in increased costs. The VC firm will be forced to build its network from ground zero in order to overcome the lack of previous deals. In this scenario frequently VC firms hire *placement agents*: these professionals serve a vital function in the fundraising market. They act as intermediaries between fund managers and qualified investors, promoting a quick and efficient fundraising process. They can range in size from one-person individual business to large investment banking's division. Another significant figure is the so called *gatekeeper*. It is defined as an institutional investor that provides managerial consulting and advisory services to entities raising capital from institutional investors, sovereign wealth fund, pension fund or wealthy physical people. Therefore, its presence in the VC investors' pool is considered to be beneficial in signaling the good quality of the fund attracting resources.[3] The last step of the fundraising phase is the arrangement of the subscription agreement. This document represents the investor application to join a limited partnership, in this case the VC fund. The drafting of the agreement is intended to limit moral hazard and conflict of interests between the VC and investors. It contains regulation about the general aspects of the investment, such as: minimal value of the investors' contribution to the investment; *capital calls,* namely the timing in which investors will provide money according to the agreement they subscribed; rules about the distribution of money raised, in order to ensure the portfolio performance optimization; general rules about the VC operating activity in order to limit conflict of interest and agency costs.[4]

[3] P.A. Gompers, J. Lerner, (2004), "The Venture Capital Cycle", 2nd Edition, MIT Press, Cambridge

[4] S. Caselli, (2018), "Private equity and Venture Capital in Europe*",* 2nd Edition

### 1.2.2 The investment process

Right after the fundraising phase, the investment process begins. This step is crucial in the determination of the VC's success, so plenty of time is dedicated to the selection of the businesses in which to invest. The investment process starts with the selection of the entrepreneurial projects, it then proceeds with the structure of the investment decision and it finishes with the implementation of the investment strategy. Every VC firm has its peculiarities and best practices in carrying out this process; however, it is possible to define some main steps considered to be common:

1) Identification of the target company;
2) Assessment of the business profile;
3) Due diligence and structuring of the financing operation;
4) Price negotiation.

The investment process is logically preceded by the screening of investment opportunities. In order to identify the best opportunity, a great number of companies should be evaluated. It is one of the primary goals for a VC firm to have an ever increasing investment opportunity flow. However, it is not easy to achieve it and it is anyway influenced by some factors, such as: the VC fund's features, geographic area of operations and the type of investment strategy. Depending upon the VC's market development stage and its reputation, the fund may have to proactively scout for investment opportunities. In the well-developed American and Anglo-Saxon VC market, entrepreneurs spontaneously submit their idea at VC firms. In Italy, and more in general in Europe, the same VC firm searches for interesting entrepreneurial business with growth potential. For this reason, network is considered a highly valuable asset for VC funds. Relationships and contacts with managers and people in the VC and startups industries can lead to great market insights and investment opportunities. Once the scouting and the screening activities are over, the VC firm selects the entrepreneurial businesses considered to be more promising and consistent with the fund investment strategy, as well as with the economic and social environment in which it operates. However, the identification of the target company is not an easy process to carry out; VC firms suffer from information asymmetries in the evaluation of companies. As already outlined, during the screening activities the VC fund applies some qualitative criteria in order to evaluate businesses, such as: geographic operations' area, the sector in which the business operates and the product/service provided by the same (therefore analyzing the underlying technology). After this first qualitative analysis, a great part of the businesses is rejected. The remaining ones are then analyzed extensively according to some other criteria, such as: target market and its trend, financial forecast, funding need, management team. The documentation that the VC fund analyzes in this

step is mainly represented by the business plan. Traditionally it is defined as a strategic plan in which the business outlines how it intends to achieve its future goals from a marketing, financial and operative perspectives. This document deeply lays out the operational company profile, but it is usually long and not particularly easy to read. For this reason, it is generally send only to investors that are seriously contemplating the idea of investing in the company. At the first approach with a VC firm, when the investor is only a potential one, startups usually present themselves with a pitch desk. This is a brief summary and presentation of the company and its business idea. It should be graphically edited since it represents the chance to capture VC attention. It generally contains some key points, such as: the business idea, the product analysis in relation to the target market, the project's feasibility from a financial perspective and the amount needed to undertake the project. A key role in the selection of businesses is played by the team and by the traction. Firstly, venture capitalists want to invest in companies represented by a team composed of highly educated people, with complementary competences and skills. The other factor highly weighted by VC funds is the traction: it can be intended as the validation of a business idea. Validation in this case means proof of the project's feasibility and could be represented by the adoption of the product/service by the market. The lack of traction is probably the main reason for a VC fund not to invest in what could appear as a good business idea. Some investors consider a great team enough to invest, others require proof of validation.

When the target company has been selected the due diligence process is initiated. This phase is perhaps the most critical one in the whole investment process. It is intended to acquire knowledge about all the company's material facts from a financial, accounting, fiscal and legal perspective. The goal is to proceed with the investment with an in-depth knowledge of the business. In this phase the business plan is revised with a particular focus on the following aspects:

1) The company profile, intended as its goals and main features (juridical form, company dimensions, economic results, business model and financing needed);
2) Product or service description, with a strong focus on the technical innovation introduced and related intellectual property protection, such as patent, trademark. This aspect is crucial, since the potential of businesses in which VC invest is often embedded in the innovative component of their product or service;
3) Target market analysis. The market is firstly analyzed in macroeconomic terms with the definition of the global and local boundaries that the business intends to attack, current market status and its potential growth rate. Then, a microeconomic analysis is carried out with the identification of customers, distribution and sales channels;

4) Description of the production process. The steps of the production process are analyzed, together with the sources of supply. In addition, sensitivity analysis is carried out in order to assess how the quantitative output level, costs and profit vary according to market demand;
5) Operation and financial plan analysis is performed, with the enumeration of all the activities to perform in order to achieve operational and financial goals;
6) The project's financial structure, with a particular emphasis on debt-equity ratio, sustainable debt level, cash flow forecasts. It is crucial for the investor to be able to assess the optimal financial structure, in order to ensure their return;
7) The team composition and the skills that characterize each member;
8) Enumeration of the possible future business' divestitures.

The analysis of these points, carried out through the revision of the business plan, is aimed at the validation of some hypothesis. The investor needs to verify that the project satisfies some main requirements, among which: the financial sustainability of the business with respect to the available financial resources; consistency of the operative plan with the goals and financial forecasts set by the same; reliability of the business plan defined as the definition of achievable and coherent goals. However, the due diligence process is a more comprehensive process. It aims at verifying the sensitive information disclosed by the entrepreneur in order to significantly reduce the information asymmetries between the parties involved. The VC firm needs to acquire knowledge on the points of strength and weakness of the target company in order to properly conduct the determination of the price and the negotiation process. The verification process carried out during due diligence concerns various business' aspects, thus it is possible to define multiple due diligence processes:

1) *Financial due diligence:* it essentially consists in an historical and forward-looking analysis of financial and economic data;
2) *Legal due diligence:* it is aimed at verify if the company is currently involved in legal procedures, if it had legal issues in the past. However, the main goal of this analysis is to confirm whether the company is potentially legally liable. This information is crucial because it can be used as leverage during the negotiation phase;
3) *Fiscal due diligence:* it has the goal of verifying the compliance with the main fiscal requirements;
4) *Commercial due diligence:* it is performed to assess the competitive position of the business in the reference market with respect of its main competitors;

5) *Environmental due diligence:* it is related to environmental regulation. Local authorities, in the case of violation of any major rules, could potentially dispose the operational shutting down of the company;
6) *Operational due diligence:* it analyzes the operations, supply chain and business model of the company in order to assess inefficiencies, whose elimination leads to better margin and economic results;
7) *Human resources due diligence:* it is an extensive analysis performed in order to assess among others the potential financial impact of any current labor disputes, working policy, employee benefits and welfare insurance.

It is crucial to highlight that the analysis of these cited aspects does not exclude the one of the entrepreneur's profile. It is essential for a VC to deeply know the entrepreneur and its team in order to assess whether they can efficiently work together. The VC needs to evaluate the managerial competencies of the team, in order to fill the knowledge gap that inevitably exists. High tech startups' founders are usually highly skilled in technical fields, but they lack financial and managerial competences. The role of a VC firm is to gain knowledge of these points of weakness in order to compensate them. At the end of this quantitative and qualitative analysis process, VC firm decides whether it is convenient to invest in the business idea.

The last stage of the investment process is embodied in the price definition and the negotiation of terms and conditions. During this step the investor attempts to relate the present and prospect value of the business, in order to determine a fair price. The theory about business valuation mentions different way in which it can be carried out. However, it always depends on the goals that the valuation has. For a VC firm, the valuation is aimed at the definition of a possible exit price that will assure a specific IRR. This last financial rate is set according to some VC investment policies and has a lower limit called *hurdle rate*. The hurdle rate is the minimum rate of return that a business project needs to present to capture VC's attention and funding. The rate is defined taking into consideration project risks, cost of capital and the return of other and different viable projects. The most used valuation method in the Venture Capital industry are:

1) Multiple method;
2) Discounted cash flow method;
3) Venture capital method.

The multiple method is generally used for the valuation of businesses which are in a growth or mature stage and it is based on the comparison with similar deals. A multiple is simply defined as

a ratio computed by dividing the market value of an asset by a specific term of the financial statements. In order to arrive at a reasonable enterprise value the multiple of a comparable VC operation is used. The enterprise value is obtained by multiplying the multiple for a specific economic measure of the company, most commonly EBITDA, EBIT or revenues are used. Once a fair price is determined negotiation process may continue. In the determination of the price some other factors are considered such as the risk of the operation in financial, fiscal and legal terms, synergies, inefficiencies and so on. Thus, the enterprise value determined through the multiple method represents a negotiation starting point. The Discounted Cash Flow method is based on the definition of the company's value according to its ability to generate future free cash flow. According to this method the company value is equal to the present value of future cash flow, obtained through the actualization of the cash flow with a discount rate. The discount rate must reflect the operative and financial risks of the project. The discount rate most used is the WACC. However, this method presents some limitations for VC purposes. When evaluating a relatively new project the VC firm does not have the possibility to observe past cash flow, therefore it can not predict future cash flow. This prevents VC firms from using the DCF method to determine the price of a startup. These limitations are overcame in the case of the Venture Capital Method. Firstly applied by the Harvard Business School's professor Bill Sahlman, this method is the most used in case of highly innovative startup ventures with short or nonexistent track record and from moderate to high risk profile. It is based on the prediction of the cash flow in a certain future date, usually corresponding to the exit of the VC fund from the venture. It is considered to be more appropriate for the VC industry, since it is centered on the most important moment for a VC firm, the exit phase. Following a brief summary of all the four stages in which the VC method is articulated:

1) First the future value of the venture is determined with any of the previously cited methods. Using market multiples is the most common choice adopted to compute the Terminal Value. Parties generally use a P/E ratio to determine the TV at the date of the exit;
2) Once the TV is computed it needs to be discounted in order to be meaningful in the moment the valuation is performed. A discounting rate is used to obtain its present value. This rate represents the investor's required rate of return and it is commonly defined in terms of the initial investment made, such as: 10x, 20x, 30x. Greater the risk, greater the discount rate used;
3) The amount that is necessary to invest in order to obtain the desired return is then computed. This amount is obtained by dividing the investment previously set by the discounted terminal value;
4) The possibility of dilution is then considered. Indeed, it is possible that the ventures will need some capital injections in the next future and this would inevitably dilute the

participation of the investor. In general, in order to compute the average dilution risk the investor would analyze three different scenarios (as is, best and worst). It then proceeds to diminish the post money valuation by this average percentage amount.

Over the years, other non-traditional valuation methods have been developed for the VC industry. However, it is not the scope of this dissertation to further analyze them, so we are only going to mention some of them. The most famous are: Berkus model, EVA, Risk factor summation method and First Chicago model. The price negotiation is not limited to the economic part of the deal: it also includes the definition of the timing and method of the payment, as well as the provision of representation and warranties drafted in favor of the VC fund.

### 1.2.3 Exit strategies

VC firms invest in new ventures with a clear objective in mind: to monetize their investment in five to ten years in order to compensate limited partners for their contribution to the fund. They try to reach the highest financial return possible in the shortest period of time. How they achieve this return? Through multiple *exit strategies*. With this term we refer to the different methodologies applied by VC to create a *liquidity event,* which can be done through five main methods. The first, and most common one, is the trade sale, also known as M&A: the acquisition of the startup by a bigger company. The acquisition can be carried out by cash, stock or a combination of the two and it is generally a private transaction. In most of the cases the buyer can be defined as a strategic one, like a company operating in the same industry or line of business of the venture. For this reason, trade sale is the most convenient exit method for the VC in economic terms. In this case the buyer will not try to heavily negotiate given its real strategic interest for the target company. Therefore the bargaining power is on the VC side, who is able to obtain the desired return. Oftentimes, the buying party has interest in the specific technology developed by the startup in order to benefit from synergies and it considers the acquisition of the whole company as the most convenient option. In addition, this strategy benefits also the company being sold since it implies the acquisition of 100% of the company and it is less time and money consuming than other exit strategies, such as the IPO. Lastly it provides the selling party with immediate full liquidity. The second exit strategy analyzed is the secondary buyout, that involves the VC selling its participation to one of its competitors. This transaction is performed in cases of deleveraging or refinancing. For instance, if the company needs capital injections, it will favorably accept the entrance of a different private equity fund with the resources to fill its needs. Secondary buyout is the ideal solution for ventures seeking growth in terms of financial structure optimization. However, one main consequence is the disruption of the relationship between the entrepreneur and VC, an event that could be unsettling for the company. Moreover, it is not unusual for a VC to exit

through an IPO. The IPO process refers to all the activities performed by the company to become public, starting floating in the stock market. This exit strategy is adopted mainly by startups in the mature stage, with a strong and stable customer base and strategy. It is without doubt the method that most benefit the VC. Through the IPO the company, and thus its investors, gains a lot of publicity and enhances its reputation; it allows for great financial return if performed during favorable market conditions; it facilitates the VC's exit since its participation is converted in shares which are easily exchangeable in the market. In addition, the IPO will allegedly lead to more favorable financial conditions for the company in its foreseeable future. However, for the IPO to be a success long due diligence process, efforts and planning are needed. The work behind the scenes is extensive and it comprehends among others: an exhaustive due diligence process, the definition of the offering size and structure, the selection of the market, the design of the share placement and the pricing of the share. These are all very expensive activities to carry out, reason why the IPO is generally performed by large ventures with strong financial records and viable market position. Recently gaining popularity is the shares buyback as exit strategy. It is used when the management does not value the presence of the VC anymore or in the case the portfolio company did not achieve predetermined goals and it decides to liquidate the fund in order to turn to other investors. It can be used to signal to the market the confidence the management team places in the project. Lastly, in the case of really inadequate performance, such as whether the venture misses all the milestones previously set or it is not able to deliver the project as designed, the VC proceeds to reassess the value of the company. The difference in price between the first and the last valuation will be treated as a loss in the balance sheet. In the extreme case the participation of the fund will result worthless, the VC will proceed with a write-off of its investment. It is worth mentioning that every business has its own life cycle that influences the right time for a VC to exit. Usually, a VC fund starts to consider the exit whenever the value of their initial investment is substantially above a certain predetermined threshold, that allows them to fairly compensate LP.

### 1.3 Performance measurement

To the argument just discussed, it is closely linked how the performance of the VC is measured. It is not the scope of this dissertation to investigate in detail VC performance measurements, thus it will follow a general overview. The main metrics used to evaluate VC performance are: rate of return, multiples and public market equivalent performance. Rate of return is also called IRR (Internal Rate of Return) and it technically represents the discount rate which makes the NPV of a stream of cash flow equal to zero. Given the duration of VC fund life cycle, the computation of returns realized in intermediate points in time must be based on future cash flow forecasts. The

IRR adopted by VC, and most in general by private equity funds, is called IRR *since inception*, computed considering all the cash flows generated by the fund from the beginning to the exit. Most venture investors seek an IRR of 30% in an average investment period of eight years.[5] This metric is used as a benchmark against other funds and other asset classes in the same period of time. However, as documented by McKinsey, only 20% of executives really understands drawbacks of IRR, which in VC terms consist in the fact that it does not consider the reinvestment risk and the capital redeployment in other projects. In addition, its value is highly dependent upon the cash flow timing and it is not a linear function of returns. For these reasons, practitioners sometimes prefer to consider multiples when evaluating the VC performance. The most used are: DPI, RVPI, TVPI. The first is the Distribution to Paid in Capital, and it represents the ratio between the amount of money distributed by the fund to LP divided by the amount of money contributed to the fund. In this terms, the higher the DPI the higher the return for investors. The second multiples here considered is the Residual Value to Paid in Capital, which is calculated by dividing the residual value by the paid in capital. Therefore, it has the same denominator of the DPI, while at the numerator it presents the residual value of the fund in a given point in time. This figure is released on a quarterly basis by the fund and it is dependent upon fund investments, calls for capital. RVPI is technically the value of unrealized investment as a percentage of called capital. Investors seek for high RVPI ratios which represent the percentage of the fund that is unrealized and still tied up in the equity of the fund. The last metric examined is the Total Value to Paid in Capital which is composed at the numerator by the total value of the fund, equal to the sum of residual value and distributions, while it has the same denominator of the previous two metrics. It can be interpreted as the sum of DPI and RVPI as it measures the total performance of the fund, composed by the return already distributed (DPI) to investors and the current valuation of still ongoing investments (RVPI) for which an exit value is forecasted. All the above multiples can be expressed in two main forms: as a simple number like 2 for instance, or in the most common form of 2x, both meaning that the fund has return to LP an amount of money equal to two times the money invested. Another commonly used method for the VC performance evaluation is the PME, Public Market Equivalent. It was firstly developed by Austin M. Long and Craig J. Nickels in 1996 and it consists in comparing the return of the private equity fund to the one provided by a public stock market index, like the S&P500. This method involves the creation of a theoretical investment in the S&P500 using the cash flow provided by the fund as the basis of the investment. In more detail, when the fund requires money by investors, so when there is a *capital call*, the method implies that an equal amount of money is used to buy the index. While when the fund distributes money to investors,

[5] National Venture Capital Association

an equal amount is received by selling the index. This procedure facilitates a comparison between the value of the fund, identified through the IRR, and the value of the theoretical investment, embodied in the PME. The value of the investment in the index is obtained by computing an IRR with the value of the investment treated as final cash flow. The scope of the method developed by Long and Nickels is to discover how an investment would have performed in the public market. This evidence must be then compared with the actual fund's IRR. When this latter is higher than the PME, the fund has outperformed the public index.

### 1.4 Venture Capital performance outlook

Venture capital industry has been characterized by a global continuous positive trend over the last decades. The 2019 is considered the second highest year for amount of dollars invested. It ended with about $225 billion invested globally, a sharp decrease compared to the record set the year before of $254 billion, 52% of which in US only. US has been the undisputed major player in this industry, with a constant increasing YoY growth. Also in 2019 US and Americas led the globe in terms of VC investments; both the number and the value of deals remained robust. The growth is being enhanced by the emergence of several VC-attracting cities, such Boston that is starting to be known as the house of tech entrepreneur talent outside the Silicon Valley. For the third year in a row, Europe set a new annual record for VC investment, maintaining consistent results in the Q4' 2019 after the $28.1 billion record registered in the previous quarter. This result has been further appreciated by global financial investors, given the uncertain financial and historical period in which it was achieved. Latest European political developments, like the Brexit, have inevitably resulted in skeptical investors. The increased level of Venture Capitalists investment reaffirms the already established diversification of European markets and the emergence of other leading countries besides UK like Germany, Ireland and Israel together with Netherlands, France and Lithuania which all attracted at least one $100 million+ deal during 2019. In contrast with the general positive trend, Asia suffered from a slowdown, especially in the third and fourth quarter of 2019. Indeed, the decreased number of mega deals led the total amount invested to fall about 42% compared to 2018 performance. The cause is mainly the political uncertainty and trade tensions with US. Despite the general trend, the Hong Kong Stock Exchange managed to register the largest listing since 2010 due to the secondary listing of Alibaba of November 2019, which counted for $11 billion.

Despite the differences in the performance across continents, there are some general trends in the venture capital industry that seem to bring together all the players. Number of deals closed are decreasing since the peak of 20,000 reached in 2015; during 2019 15,000 deals were concluded. This negative trend involves also first time financing, which has been falling since 2014 reaching

its low last year with 5,878 deals. This can be explained by the increasing tendency of VC firms to invest in later stage start up rather than in early stage ones but also with the ever increasing availability of funds for new ventures. In contrast, 2019 was the year with the highest number of unicorns births. 110 VC backed new unicorns were founded globally. US gave birth to 71 of them, while Europe registered 18 new unicorns with an 83% increase compared to 2017, when only 3 unicorns were established. For what concerns venture capitalist exits, IPO remained strong during 2019 despite the tendency of startup to remain privately held for longer period of time. In 2019 more than 13 US unicorns issued IPOs, including Uber and Lyft. In addition, since the Spotify's direct listing in 2018, companies are considering this method to raise immediate liquidity. This was the case of the unicorn Slack, which issued a direct listing during 2019. Lastly, in the light of numerous disappointing IPOs, Venture Capital investors are screening investment opportunities with the lens of caution: as it is empirically demonstrated in the last chapter, they tend to focus more on profitability, business model consistency and financial sustainability. They also require higher level of transparency from the companies they screen in order to take conscious wealth allocation decisions. This trend is spreading around the world, making almost impossible for companies to refuse the disclosure of sensitive information.

Current year global pandemic emergency, poses several challenges to global economy, VC industry comprised. If the first quarter has registered a solid start, we can not expect to observe the same performance in the next months. Deals concluded during the first three months of 2020, defined the calm before the storm, are indeed the result of previous months' negotiation process and bureaucracy work. In particular, $60.3 billion were invested globally in the first quarter across 4,260 deals. Coronavirus, also scientifically defined as COVID-19, is the new black swan of financial markets. While VC deals decreases due to the pandemic, venture capitalists are believed to be sitting on a significant amount of dry powder, estimated by PitchBook to be around $189 billion. This means that a lot of money are waiting to be invested as soon as the health emergency will start to vanish. There is also the belief that the technology relevance enhanced by this crisis will lead the deployment of capitals in the high tech innovative sector. Indeed, this pandemic has forced us to stay inside our houses and work, study, relax and produce through digital solutions. In addition, some previously established trend will reinforce: already cautious investors will proceed with even more prudence in the selection, valuation and due diligence process. More caution is likely to mean fewer seed and Series A financing rounds and more safe investment in companies with already established financial track. Cross-border deals will also suffer due to the restrictions to travel; the deals already in motion will also present longer transaction times given the impossibility to perform in-person due diligence processes.

## CHAPTER 2: The ecosystem of high tech startups

### 2.1 The rise and the development of high tech industry

The term *high technology* appeared for the first time in 1957 in an article published by New York Times, referring to atomic energy produced in Western Europe. Today, the abbreviation high tech is used and it refers to the most advanced state of technology in a given moment. The sectors involved in the high tech industry are characterized by companies whom core business is to produce and/or distribute advanced-technologically based products and services. Being an extremely dynamic phenomenon, the term high tech always points out different technologies as well as instruments. Its roots go further back in history, when the Massachusetts Division of Employment Security (DES) enumerated 20 industry groups as high technology industries based on some technological indicator, such as R&D spending and technical employees. At the very beginning of high technology era, the industry was anchored to semiconductors. Then in the '80s the ultimate identified high technology sectors were the computer and software ones and in the '90s the internet world dominated the scene. Today the concept of high tech embodies a much wider category of industries and sectors. Last decades seen the rise of disruptive technologies which totally revolutionized our way of living, such as artificial intelligence, fintech, social media, nuclear power, robots, telecommunication, healthcare, biotechnology, sharing economy-based businesses and cloud-based computing. Today they are all included in the high tech category. The high tech industry has recorded ridiculous economic results since the 1990. The first period characterized by enormous growth, hardly experienced before in any other industry, was the period between 1990 and 2000, when the dot-com bubble exploded in US. The release of Mosaic, the first web browser, gave the possibility to every computer user to access the World Wide Web. Consequently, the use of Internet spread across countries and owning a personal computer became a necessity rather than an option. Some politics choices were made, which enabled the dot-com bubble to happen: trough the Taxpayer Relief Act of 1997 top marginal capital gains tax in US were lowered, incentivizing investors to make riskier investment decisions and the Telecommunication Act of 1996 foreshadowed the creation of numerous new technologies in which invest and make profits. All these factors contributed to the massive investments made in the dot-com industry. Money to invest were easy to raise, through VC and investments banks' lending and there was the belief that any company involved in the Internet industry would eventually have record profits, making every investor rich. This widespread market sentiment led investor not to look at some traditional indicators, such as the P/E ratio, but to trust and follow the common enthusiasm around this new profitable sector. This inevitably caused the bubble characterized by what today are considered classic speculative features, such as a 400% growth of

the NASDAQ Composite in only five years (1995-2000), with its peak in 2000 of more than 5,000 points. During the bubble, it was possible for a dot-com company considered to be promising, to proceed with the IPO without even any record of the alleged profitability. Obviously, the stocks of these companies were mispriced and they disappeared as fast as they suddenly were emerged. Four companies namely Microsoft, Intel, Cisco and Dell, fueled much of the 1990 high tech rally and for this reason were defined the "four horsemen". Among them, only Microsoft recovered from the burst of the bubble, Intel and Cisco are currently below 2000 levels and Dell was converted into a private company and relisted only after. The bubble led to the failure of some big companies, like Worldcom and took over a decade for Wall Street to recover as reported by Refinitiv Data.

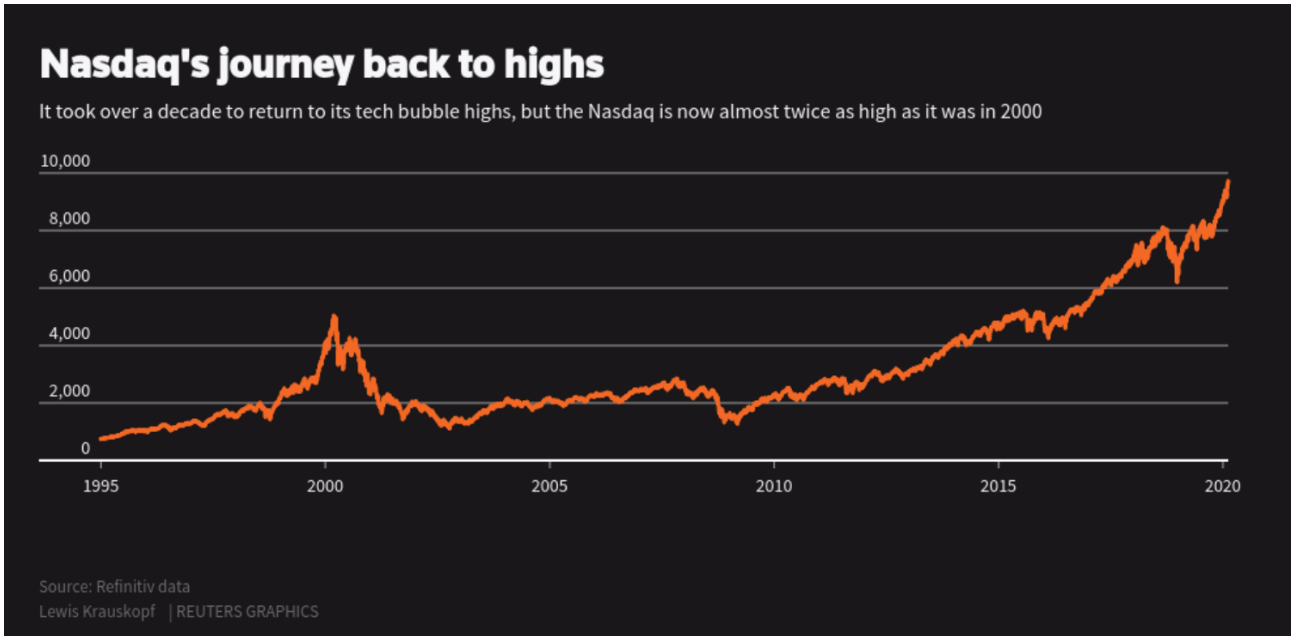


*Figure 1, Nasdaq's Journey, Refinitiv Data*

As shown in the figure above, NASDAQ today is almost twice as high as in the 2000. It reached a peak of 9,700 on February 13 2020, almost doubling the level reached in 2000. In the last decades, other giants conquered the market riding what we can define the second big wave of high tech. The high tech industry started in 2010 to be dominated by other types of companies, defined to belong to the TMT sector (Tech, Media and Telecommunications). The major players today are referred to with the acronym "FAANG": Facebook, Amazon, Apple, Netflix and Google. These five companies are among the largest in US, counting for more than $4.1 trillion of market capitalization as January 2020. They are all traded on the NASDAQ and comprised in the S&P500, making about the 15% of this index that represents a proxy of the US economy. This makes it clear the impact that these companies have on the American, as well as global, economy. Once again, tech industry is dominating the scene of public markets recording ridiculous gains. Some concerns were raised about the volatility of these companies' stocks, which

have inevitably affected the market especially in 2018 when some of them began to lose more than 20% of their previous valuation. In August 2018, FAANG stocks were responsible for the 40% drop of the S&P500. For obvious reasons, investors have learnt the dot-com lesson, therefore they fear for the stability of markets. If it is undeniable that the enormous returns recorded by these companies may resemble the dot-com era, it is equally true that not every company succeed like this. Taking the example of WeWork, further analyzed in the following chapters, that failed the alleged multibillion dollar IPO, we can speculate that investors act more carefully, not blindly trusting companies without profitability records.

As it is now clear, high tech industry had both positive and negative peaks but US, specifically the Silicon Valley area, has never stopped dominating the scene. This area can be considered a high tech startups cluster, with the presence of the world's largest high tech corporations, thousands of startups and more than 30 businesses among the ones listed in the Fortune 1000. It started to be the home of tech giant since the '50s, hosting Google, Apple and Microsoft. Being the heart of the startup ecosystem, the term Silicon Valley is nowadays used with a metonymical way to indicate all the high tech startups established in the Bay Area. The cluster of startups drew the attention of Venture Capital firms. VC firms' presence exploded in 1980 after the $1.3 billion IPO of Apple Computer. Today Silicon Valley counts for more than one third of all the capitals depleted in the United States, with the highest concentration in the entire world. Some of the most powerful VC firms such as Sequoia Capital, Kleiner Perkins Caufield and Byers have their headquarters in the Silicon Valley area. Without their economic contribution the biggest high tech companies would not be standing today.

### 2.1.1 A new category of high tech startup: the unicorns

The term *unicorn* was first used in 2013 by Aileen Lee, a venture entrepreneur and founder of a seed-stage investment fund based in California. She mentioned this term in her *article "Welcome to the Unicorn Club: Learning from Billion-Dollar Startups"* published on Techcrunch referring to privately owned tech startup valued at least $1 billion. The number of unicorns has constantly increased over the years, reaching in June 2020 the worldwide figure of 600 with the entrance of 44 new companies only in the first six months of this year .[6] The list includes well-known companies like Stripe, Airbnb, SpaceX, Revolut, Klarna and Didi Chuxing. These unicorns are collectively valued $2 trillion, with a 25% increase in value compared to 2019. The figure below is intended to provide an intuitive summary of the number of companies which conquered the

[6] G. Teare, "Private Unicorn Board Now Above 600 Companies Valued At $2T", *Crunchbase News*

unicorn status over the last five years, as well as the funding collectively raised and post money valuation.

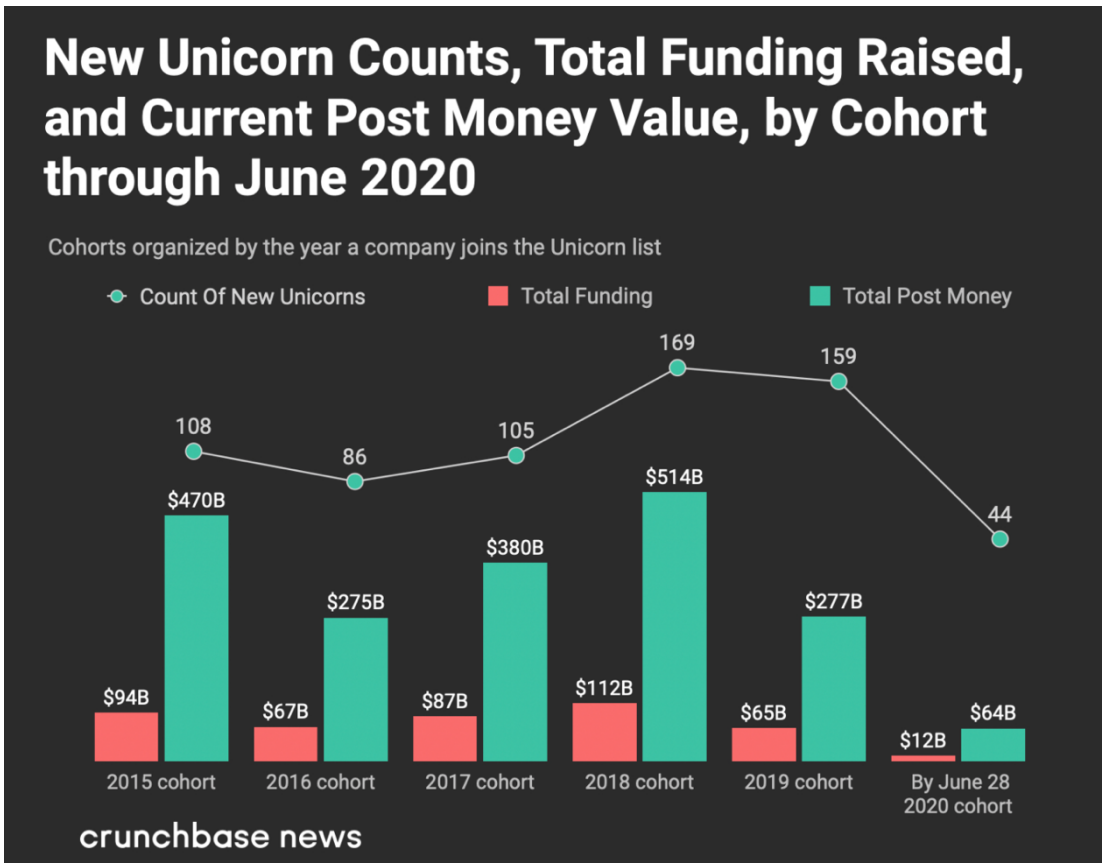


*Figure 2, New Unicorns counts, Crunchbase News*

Unicorns are geographically distributed mainly among US and China, but Europe is starting to present some of them too. Clearly, this geographic distribution is not by chance: it reflects the activity of VC market in different continents. US and China are the most evolved VC markets and this allows unicorns to be noticed and financed. The path is a bit more tortuous for European companies but the situation is evolving. The skyrocket valuation assigned to these high tech startups is quite controversial, since most of the times it does not reflect a real financial performance of the company, but it is rather the result of VC and private investors valuation, which participate in the financing rounds of these businesses. These valuations are based on growth expectations, financial and customer base projections but they do not consider any fundamental data. What could surprise the most is that often unicorns do not even present revenues yet; still they are valued billions. These peculiarities is why the term unicorn is well fitted. As explained by Aileen Lee, she chose this term because "they are very rare companies in the sense that there are thousands of startups in tech every year, and only a handful will wind up becoming a unicorn

company. They're really rare." [7] The reason behind the constant increase in the number of unicorns is attributable to the operating of VC funds and the ever increasing checks they have written in favor of tech startups. VC firms and private investors with their financing, have considerably extended the medial term of an IPO. In the 2000, according to NVCA, this term was about 3.1 years but it doubled in fifteen years due to the benefits that a company may achieve remaining privately held. This is a direct consequence of the increasing amount of money VC have deployed in high tech startups over the last decades. Clearly, is more convenient for a company to have a private investor fueling its growth without pushing for quarterly results, profitability proof and sustainable business model. This enabled startup with uncertain profitability, revenues and business model to emerge, survive and reach billionaire valuations. This phenomenon is not devoid by concerns of the public markets. Many believe a tech bubble is ready to burst, causing even more damages than the dot-com one. This is confirmed by some disappointing IPO performed over the last year, like the one of Uber. Public market is someway reluctant to finance loss making companies, even if pictured by VC funds like disruptive businesses that will change their industries of origin. Empirical analysis of this occurrences is provided in the last chapter of this dissertation.

### 2.2 The definition of high tech startup

The rise of the high tech industry and its technology advances are the result of what is called innovative entrepreneurship. The innovative entrepreneur is someone that creates and develops new products and services through the use of the most advanced technologies. This figure finds its rationale and in turn its natural habitat in high tech startups. Not by chance, the term startup was initially only used in relation to dot-com businesses. Today we define it as *"young, newly emerged company which is characterized by a high rate of innovation and a fast-growing business that aims to meet a marketplace's need by developing a valuable business model around an innovative product, service, process or a platform"* [8]. A part of the literature has for many years referred to these companies with the term New Technology Based Firms (NTBF thereafter). Even though the exact definition of NTBF presents some slightly different features compared to the one of startup, for the scope of this analysis these two terms may be used to refer to the same phenomenon. The term NTBF will be mention in the following chapters whenever the literature reference reported made use of the term itself. This terminology decision stems from the intention to convey the meaning of the reference as closely as possible. Being at the beginning of its life cycle, a startup

[7] L. Smith, What is a Unicorn: definition, origins, and current known "unicorns", *SNOVio*

[8] N. Robehmed, (2016), "What is a startup?", *Forbes*

is commonly capital constrained and has the necessity to raise external capital from private investors, such as VC firms. Given the definition of high technology introduced in the previous paragraph, what is considered a high tech startup will vary according to the latest developments of technology in a given moment. High tech startups are based on potentially scalable and replicable business models. In this context scalable means a business model that can exponentially expand its dimensions in term of clients and turnover, without the necessity to invest a directly proportional amount or resources. Replicable instead means that the business can be developed properly in different times and places without significant changes, but only small adjustments. According to PWC, there are some features a startup must present to be considered a high tech one: technology and innovation are the core competitive advantage of the product or service being produced; the business is highly leveraged on labor input so that can easily and rapidly scaled; product or service developed is a disruptive innovation, in the sense it creates a new market, a new supply chain or network; annual revenues are below $5 million. The relevance of startups has been enhanced several times by government and economic association. They play an essential role both in terms of employment and competitiveness. The emergence of these companies has enhanced employment rate, innovation spreading and has supported competitive dynamics, protecting market efficiency. Since the mid-1980 nearly all the members of OECD have pursued policies aimed at encouraging the entrepreneurial industry, improving the economic and legal conditions faced by entrepreneurs. Special attention was then given to high tech startup, in accordance with the more general target of boosting the knowledge-based universe of companies in Europe. Their role and beneficial implications have been legally recognized by European bodies in more than one occasion. Innovation was the heart of the Lisbon Agenda in 2000; it was defined like the motor of economic change, as already suggested many years before by Schumpeter. High tech startups' centrality was also reiterated by the European Commission in the occasion of Europe 2020, which proposed the creation of the Innovative Union in order to strength innovation chain and boost innovation investment in Europe.[9] Today the importance of high tech new ventures could not be more obvious. Our society makes large use of innovative solutions provided by these companies, in the most diverse sectors, making our everyday life easier and more connected.

[9] Europe 2020, (2010), European Commission

### 2.3 High tech startup challenges faced: the knowledge and funding gap

High tech startups are innovation intensive companies. Precisely such innovative component, which is their greater competitive advantage, may prevent them to easily access external capital. For the entrepreneur to transform the innovative component into something that can be sold and make profits, some factors have to be considered like R&D. The development of a typical high tech venture's product is preceded by a relatively long period of research activity, during which financial resources are necessary to compensate people working, to buy software and technological infrastructures. Consequently, they are capital demanding companies since the very first steps of their life. However, obtaining external funding is one of the biggest challenge faced by high tech startups for several reasons. First of all, the innovative component of their solutions is not easily understood by everybody. Oftentimes you need to have technical competences to really understand the potential of their products and services. In literature this phenomenon is referred as the *opacity of information*: even when disclosed, information about the functioning of their products may be not clear and apprehensible. Moreover, high tech startups encounter constraints in disclosing sensitive information about their projects, since their chance to succeed is almost completely embodied in those details. In turn, this worsens the opacity information and it makes difficult for potential investors to completely appreciate their projects. This circumstance prevents high tech startups from receiving money in public markets[10]. While the lack of records about their financial solidity and their inability to offer collaterals prevent them from receiving investments from the debt side, like from banks, incurring in the so called *innovation debt penalty*.[11] Finally, exactly because of the innovative component, high tech startups' projects usually are implemented in a context of multidimensional uncertainty, which makes difficult to predict their outcome.[12] Products commercialized by these businesses usually present new features, never introduced in the market before; therefore it is clear the reason of their unpredictability. All the factors mentioned so far represent a real threat for the survival of innovative companies, which are at the same time capital constrained and capital demanding. Usually high tech startups' founders adopt the so called

[10] G. Ferrarini, (2013), "Corporate Disclosure as a Transaction Cost: The Case of SMEs", *European Review of Contract Law 9*, pp. 363

[11] M. Cowlinga, E. Ughetto, N. Leed, (2018), "The Innovation Debt Penalty: Cost of Debt, Loan Default, and the Effects of a Public Loan Guarantee on High-tech Firms*", Technological Forecasting and Social Change 127*, pp. 166

[12] J.S. Mcmullen - D.A. Shepherd, (2006), "Entrepreneurial Action And The Role Of Uncertainty in the Theory of the Entrepreneur", *Academy of Management Review 31*, pp. 11-25

*bootstrapping financing* solution in the early stages of their projects, exploiting all the personal resources and asking to friends and family to do the same. However, when these resources are not enough anymore, there is a huge possibility for the company to suffer of a premature death. It is not unusual for high tech startups not to find investors which believe in their project and are willing to provide external capital injections. The lack of external capital, the so called *financing gap*, damages companies that would potentially be beneficial for the society as a whole. One can conclude that the financing gap is caused by adverse selection and moral hazard, created by market imperfections. These market frictions are the conditions justifying the existence and operations of some intermediaries, such as Venture Capital firms. They fill the funding gap faced by high tech startups by investing in those companies considered too risky and untrustworthy. In a sense, the role played by VC enhances the efficient allocation of resources. Analyzing deeper this argument, the already cited information opacity and more in general all the circumstances preventing high tech startups to access external capital would lead, in the absence of VC financing, to the existence of *market for lemons.* With this term, economic literature refers to the situation in which asymmetric information causes the circulation of poor quality products, called *lemons*, at the expenses of all those good quality suppliers that are incentivized in some way to leave the market.[13] In this context, by financing the innovative companies that would otherwise be considered *lemons*, VC are preventing the existence of market for lemons, alleviating the consequences of information asymmetries.

The other challenge faced by high tech startups, particularly in the first stages, is the *knowledge gap*. The founders and their teams are in general highly skilled in technical fields related to the products or service they develop. However, they lack management competences in all its aspects. They usually do not have experience in resource allocation, accounting and financial, human resources and marketing, just to mention some. As already outlined in the first chapter, VC investment is not limited to equity contribution; their experience and developed know how allow them to fill the knowledge gap through mentoring and advising activities. The competences they introduce are of inestimable value for the new venture. Due to the VC sectoral specialization they positively contribute with the practices considered to be more beneficial for early stage innovative companies. The alleviation of the knowledge gap is one way in which VC firms add value to the firms, besides the provision of capital. The effectiveness of their contribution is also enhanced by the continuity of their assistance to the ventures. They are minority equity investors in all respects, consequently they have earned the right to seat in the Board of Directors. VC are no silent partners;

[13] G. Akerlof, (1970), "The Market for Lemons: Qualitative Uncertainty and the Market Mechanism", *84 Quarterly Journal of Economics*, pp. 488 ss

they proactively contribute to the day to day management of the company, ensuring a close collaboration and the alignment of their interests with the ones of the management team. However, VC firms may encounter some initial endurance from the management team. Oftentimes, there is a great culture gap between the two parties preventing the management side to completely trust and accept VC intervention. High tech startups are knowledge-based companies whom competitive advantage is strictly related to the innovation they detain. This explain why they may be reluctant in the first moments to openly disclose their most valuable asset. Indeed, the term *knowledge gap* is often referred to this cultural gap that exists between management and VC funds.

### 2.4 Life cycle and financing process

High tech startups' life cycle, and more in general the one of small and medium sized companies, has been studied for long time and it is defined as a linear and progressive process. The dominant theoretical framework about high tech new ventures' life cycle is the *stage model*. It defines the development of new ventures as consisting of several sequential stages, each one with specific financial requirements. As pointed out by Roberts, high technology startups evolve through several corporate growth stages at which correspond a parallel evolution in financing structure.[14] The model assumes the company requiring different management and structures in order to face the challenges posed by each stage of its evolution. This model appears to particularly fit to high technology based startups, because it resembles the stage approach adopted by Venture Capitalists to structure their deals. The model developed by Roberts in 1991, is still adopted to explain high tech startups' lifecycle as confirmed by the European Startup Monitor (ESM) Report drafted in 2015.[15] Their life cycle is characterized by five main stages: pre-seed stage, early stage, early growth stage, sustained growth stage and steady stage. Each stage presents different financing solutions and potential challenges, as we are going to analyze.

#### 2.4.1 Pre-seed stage

As mentioned in previous paragraphs, high tech businesses are knowledge-based companies given the massive amount of R&D activities necessary to design and implement their business idea. Usually, founders of these realities come up with innovative ideas, that are not yet proven to be commercially viable. Particularly important is the role played by human capital: all the new venture's potential is enclosed in the founders' minds, efforts and competencies. This very first

[14] E.B. Roberts, (1991), "Entrepreneurs in high technology; lessons from MIT and beyond", New York: Oxford University Press.

[15] Kollmann, Stockmann, Linstaedt, & Kensbock, 2015

step is dedicated to the feasibility study of the business idea, market research and the business model design. Initially, the R&D activities are carried out on a part-time basis, while founders are still based on a previous job or even at university. The uncertainty faced during the seed stage is the highest: founders only have concepts in mind, not yet converted in services or products; they do not have external capital available and in some cases they are not even certain about the correct functioning of the idea developed. All this factors taken together enhance the risk undertaken by founders when committing their personal capital, together with personal savings of family and friends. The probability of failure in the seed stage is very high, and this is also the main reason of VC firms' reluctancy to invest in this phase. The startup enters the next stage with the drafting of a business plan, considered to be the most important output of the pre-seed stage.

### 2.4.2 Early stage

This second stage can be divided in two main steps: the seed and the start-up stage.

a) Seed stage: this phase is aimed at the creation of the so called MVP: minimal viable product. This strategy, developed by Steve Blank and Eric Ries, is intended to prevent the high tech startup to produce something that is not accepted by the target market. It maximizes the information gained about the potential users in the pre-seed stage in order to efficiently allocate resources in the aspects that most matter for the target. Therefore, in this stage an interactive process development is started. The uncertainty is still high and the financials still constrained. However, this stage is financed by the FFF provisions as well as by business angels or early stage investors.
b) Start-up stage: the start-up phase is characterized by prototype development of the product designed in the seed stage. Prototyping is not a simple process, it involves several attempts in order to draw out weaknesses and correct them. Prototyping is performed together with testing activities of first users at which the product is submitted. During start-up stage the company experiences the funding gap for the first time, since limited and personal funds are probably exhausted and debt financing does not represent a viable option, given the riskiness and uncertainty that characterized the company's operations. The situation is also worsened due to long lead time that characterize high tech industry. Their products are highly innovative so their realization takes longer time compared to other industries. Injections of capital by some external investors will be necessary to assure the accomplishment of operational timetable. However, the channels of external capital at which high tech startups may have access are not the traditional ones. As outlined in previous paragraphs, they face several financing constraints: the most traditional provider of external capital, debt side, is usually not accessible by new ventures. Initial capital is

provided by entrepreneurs themselves, family, friends and third party private investors. As reported by Moore, if private equity and/or venture capital is not available, high technology ventures are likely to face serious survival threats.[16] It is not unusual for high tech new ventures to deal with financial constraints through cash flow from consulting services.[17] Many begin their activity with low risk service-oriented business models, defined as *soft*, and they choose to *harden* over time diverting to product-based activities. This strategy allows newly established startups to rely on some safe initial cash flow, which can be used to finance the operations needed to develop their core product. This is called soft start-up entry strategy.

### 2.4.3 Early growth stage

The early growth stage defines the end of the product development phase and the start of the commercialization one. High tech new ventures will start to sale their definitive version of the product in the target market, recording first sales cash flow. In turn, low risk consulting activities previously implemented may be gradually relaxed and the riskiness of the whole project starts to decrease. External investors will value the potential of the project and its competitive advantage in comparison to other players, providing additional funds.[18] In this stage, founders gain all the benefits deriving from previous efforts and sacrifices. If they correctly prototyped and tested products in the seed and start-up stage, successful results would arise in the early growth stage. Finally, operations may be financed by retained earnings, therefore internal funding starts to be one of the main financing sources. The commercialization phase will inevitably carry much higher costs; so operational efficiency strategies should be implemented.

### 2.4.4 Sustained growth stage

The following stage is the sustained growth, which is characterized by a persistent expansion. The strategy is focused on diversifying markets and products in order to maintain stable growth, satisfying increasing demand. Consequently, investments are needed in order to fuel growth. At this stage the new ventures start to take on the form of successful established companies. They can

[16] B. Moore, (1994), "Financial constraints to the growth and development of small high technology firms", *Finance and the small firm*, pp.112–144

[17] M. Bullock, (1983), "Academic enterprise, industrial innovation and the development of high technology financing in the United States", Brand Brothers and Co.

[18] J. C.Ruhnka, J.E. Young, (1987), "A venture capital model of the development process for new ventures", *Journal of Business Venturing*, Vol. 2, issue 2, pp. 167-184

also rely on some larger companies' typical benefits, such as bargaining power with suppliers, longer credit terms with financing parties and reputational related advantages.

### 2.4.5 Steady stage

The last stage is characterized by low or even decreasing growth rates both in terms of sale and customer value.

In conclusion, the model that has been assumed as theoretical framework to explain the different high tech startups' financing steps correlated to their growth is a stage model. However, this model is not free of critiques. It assumes that all the high tech new ventures pass through each step, however numerous among them suffer from premature death and do not even arrive at start-up stage. Further, among the ones that survive, few succeed to sustainable growth stage.[19] Other literates consider the development process as stochastic rather than a linear one so they do not share the same vision of the stage model about how new ventures evolve.[20] According to the stochastic view it is not possible to reduce the development of high tech startups to a succession of predetermined stages, because the process itself has variable components impossible to predict accurately.

## 2.5 Capital structure and POT in high tech startups

Capital structure is one of the most debated topic in corporate finance, to whom was dedicated great attention and around which there are several theories. The acknowledge starting point is the Modigliani and Miller *irrelevance theory*, which states that in the presence of perfect market (one without taxes, information asymmetries and transaction costs), the value of the company is not related to its financial capital structure, but it is rather function of its real assets profitability and riskiness.[21] In their second paper published some years later, Modigliani and Miller relaxed some of the previous assumptions and corrected the model for the corporate tax imperfection. Their conclusion was that due to the deductibility of debt interest, debt financing is considered to be beneficial in terms of higher after tax net cash flow. This benefit is generated by the so called debt tax shield, as opposed to dividends which are not tax deductible. Therefore, they reach the conclusion that capital structure indeed matters and the best scenario for a company is to have 100

[19] A.A. Gibb, L.G. Davies, (1991), "Methodological problems in the development and testing of a growth model of business enterprise development", *Recent research in entrepreneurship*, pp. 286-321

[20]C. Gersick, (1994), "Pacing strategic change: the case of new venture", *Academy of Management Journal*, Vol. 37, pp. 9-45

[21] F. Modigliani, M. H. Miller, (1958), "The Cost of Capital, Corporation Finance and the Theory of Investment Author", *The American Economic Review*, Vol. 48, No. 3, pp. 261-297

percent of debt.[22] However, this theory does not reflect the reality at all, given that high level of debt implies financial distress that represents an indirect cost for the company. Another relevant theory about capital structure is the Pecking Order Theory (POT thereafter), based on information asymmetry. According to POT companies tend to follow a hierarchical order in choosing which source of capital use first and the cost of financing increases with information asymmetries. At early stages entrepreneurs prefer to use internal funding, then once this is depleted debt is issued, and as last resource equity is used. Myers and Majluf analyzed reasons behind equity being last choice in company capital structure, highlighting the role played by information asymmetries. The theory they developed stems from the assumption according to which managers own high quality information and when they issue new equity is only because they consider the company to be overvalued. The market perception is that managers possess some privileged information and they take advantage of it increasing the equity component in the company capital structure. This in turn pushes investors to assign lower market value to the company.[23] Consequently, the information asymmetry problem between company management and outside uninformed investors is at the heart of POT. Several studies demonstrated that the preference of internal funds as primary source of capital applies to high tech startups, and more in general to SMEs.[24] However, there is evidence suggesting different results for high tech new ventures' choices about debt and equity issue.

As it will be further analyzed in the following chapter, high tech startups face three main market imperfections preventing them to access debt side financing (especially credit bank), and these are: opacity information, moral hazard and lack of collateral. In particular, the mentioned opacity information, caused by information asymmetry and technology uncertainty, affects banks investment decision as confirmed by a study published by the European Commission in 2001, in which we can read: "*A significant strand of opinion within the banks is that good practice for commercial banks is simply to avoid lending to New Technology Based Firms. This is because banks are by definition slower than their clients to understand new technologies, and are therefore in no position to assess risks accurately*". The challenges faced by this type of businesses in accessing debt, force them to divert from the capital hierarchy defined by traditional POT and to prefer equity financing provided by VC firms. For this reason, the literature has developed the so

[22] F. Modigliani, M. H. Miller, (1963), "Corporate Income Taxes and the Cost of Capital: A Correction", *The American Economic Review*, Vol. 53, No. 3, pp. 433-443

[23] S. C. Myers, N.S. Majluf, (1984). "Corporate financing and investment decisions when firms have information that investors do not have", *Journal of Financial Economics*, Vol. 13, No 2, pp. 187–221

[24] On this topic refer to Tyebjee and Bruno, 1982; Roberts, 1990 and 1991; Lumme, Kauranen, and Autio, 1994; Moore, 1994; Bank of England, 1996; Giudici and Paleari, 2000; Lindholm-Dahlstrand and Cetindamar, 2000

called Revised Pecking Order Theory for high tech startups. Indeed, as suggested by Sau, POT can be inverted to the extent that VC firms, which represent equity financing, perform an evaluation function that reduces the information asymmetry after which innovative firms can turn to bank credit.[25] Thus, high technology ventures apply the Revised POT first adopting equity financing and approaching bank side only in a second moment, when the intervention of venture capitalists have alleviated information asymmetries. It is appropriate to mention that this view is not backed unanimously by the literature; there are some studies suggesting high tech startups follow the traditional POT. However, there are few empirical papers exploring the hypothesis according to which they behave as SMEs do. There is a research paper drafted by Fourati and Affes, that explores the hypothesis of reversed POT for high tech new ventures. Taking into consideration the problem of opacity information, they document that entrepreneurs are inclined to firstly finance their companies with personal savings, then by external equity and lastly by external debt.[26] These findings are consistent with the study carried out by Minola and Giorgino that, through an empirical analysis of determinants on UK NTBF's financing, reach the conclusion according to which younger, smaller and R&D heavily engaged firms are less likely to apply for bank credit, preferring equity over debt. Also growth oriented firms result to be more inclined to VC financing, as well as those operating in international and unsaturated markets.[27] Finally, Paul et al. suggest that innovative entrepreneurs prefer equity over debt for two main reasons. Firstly owners consider debt received as a personal liability; secondly entrepreneurs highly value the know-how and competences provided by VC when investing in a company.[28]

### 2.6 High tech startup's growth determinants

High tech new ventures' growth is greatly enhanced by the intervention of VC firms, with the provision of capital but also with the contribution of a broader set of factors like VC's competences, network and professionals. Empirically, VC involvement explains a major part of high tech startup's growth. However, there exists a broad part of the literature dedicated to the determinants of growth in these type of businesses. Over the last decades, several theoretical

[25] L. Sau, (2007), "New Pecking Order Financing for Innovative Firms: an Overwiew", Working Paper No. 2, Department of Economics, Università di Torino, Italy

[26] H. Fourati, H. Affes, (2013), "The capital structure of business start-up: Is there a pecking order theory or a reversed pecking order?", Faculty of Economics and Management, University of Sfax, Sfax, Tunisia

[27] T. Minola, G. Criaco, L. Cassia (2013), "Financing pattern in new technology-based firm: an extension of the pecking order theory", *International Journal of Entrepreneurship and Small Business*

[28] S. Paul, G. Whittam, J. Wyper, (2007) "The pecking order hypothesis: does it apply to start-up firms?", *Journal of Small Business and Enterprise Development*, Vol. 14, No. 1, pp.8–21

frameworks have been developed around this topic with the aim of identify which factors interact in their growth process. This paragraph is intended to provide a brief review of the most significant ones for the scope of this analysis. In particular, theory has developed around resource-based view and knowledge-based view of the company.

### 2.6.1 Resource-based approach

The resource-based view, according to which the firm can be conceptualized as a collection of productive resources, was firstly idealized by Penrose.[29] In his perspective, the growth process of the firm consists in the exploitation of the *productive opportunity* that resources owned by the company represent. This approach has started to capture the interest of academics and professionals only in a second moment, when Whernefelt introduced the word *resource-based*. According to the resource-based view the productive opportunities entrepreneurs can collect and pursue are unlimited, thus the firm's growth, defined as the exploitation of productive opportunities, is unlimited too. However, the growth process is dependent upon the firm's resource base. For this reason, for the company to growth it is necessary to constantly increase resources and also assure that management have the competences necessary to exploit resources. In this perspective, a firm competitive position can be defined as the bundle of unique resources and competences handled by the management team.[30] Together with resources and competences, relationships also matters in defining the competitive position of the firm. These three factors need to be renewed over time due to the change in competition and strategy. The firm need both external acquired and internally developed resources, therefore it is essential to implement proper strategies in order to acquire resources from the environment. In the high tech new ventures case, internal resources may be competences and skills required to design the innovative product or service, while external resources may be represented by capital required to finance the product development. Over the years, Barney dedicated lot of research on the resource-based view. His studies, which became the main reference in this field, enumerate the two cornerstones of resource-based view: 1) resources are distributed heterogeneously across firms 2) resources are sticky, thus their transfer from one firm to the other is costly.[31] According to Barney, resources need to present four features in order to ensure long-term competitive position. They need to be *rare*, *non-imitable*, *valuable* and *no equivalent substitutes* must exist. Generally, resources are rare whenever the

[29] E. Penrose, (1959), "The theory of the growth of the firm"

[30] R. Rumelt, (1984), "Towards a strategic theory of the firm", *Competitive Strategic Management*

[31] JB. Barney, (1991), "Firm resources and sustained competitive advantage", Journal of Management, Vol. 17, issue 1, pp. 99-120

demand is higher than the supply. In Barney and Arikan perspective resources are scarce as long as the number of companies in possession of relevant resources are less than the number of firms that are necessary to generate the competition required by the strategy implemented with those resources.[32] Moving to the second requirement, resources are said to be non-imitable, whenever the processes carried out to accumulate them present the five features identified by Dierickx and Cool: time compression diseconomies, asset main efficiencies, interconnectedness of asset, asset erosion and causal ambiguity.[33] If the accumulation process present *time diseconomies*, resources are non-imitable due to the nonlinear relationship that exists between the time necessary to accumulate resources and the investment made in resource acquisition. *Asset main efficiencies* exist when the already existing stash of resources facilitates the accumulation process of other resources. It is clear that an accumulation process that presents asset main efficiencies is likely to make the resources non imitable by others. The *interconnectedness of asset stock* also contributes in making resources difficult to imitate: it implies that additional amount of a given resource is linked to the level of another one. Further, if not maintained, the resources presenting the feature of *asset erosion* will inevitably disappear. Lastly, resources are considered non-imitable when the process through which they are accumulated allows to identify how the process happens. This feature is called causal ambiguity and it is the last of the five main characteristics Dierickx and Cool examined to be necessary in an accumulation process for the resources to be non-imitable. Moving back to the third requirements identified by Barney for the resources to ensure a long-term competitive position, they need to be valuable. A valuable resource is one that allows the implementation of a strategy that leads to better performance. Empirical applications of the resource-based view are usually associated with its application in the strategic management. In this perspective interorganizational relationships assume great relevance in new fast growing ventures. Collaborations and alliances are well established methods to share and acquire resources since high tech startups are more inclined to use external resources, than other companies. The complementarity of resources is also considered to be an incentive of alliances: new ventures exploit their possession of superior resources to acquire complementary ones. In interorganizational relationships they usually leverage on innovative and high tech components they design, which can be of great interest for other companies. The relevance of the resource-based view is clear if applied to highly innovative businesses, which are resource demanding and

[32] JB. Barney, AM. Arikan, (2001), The resource-based view: origins and implications", The Blackwell Handbook of Strategic Management, pp. 124-188

[33] I. Dierickx, K. Cool, (1989), "Asset stock accumulation and Sustainability of firm performance", *Management Science*, Vol. 35, pp. 1504-1514

constrained at the same time. Internal and external resources are necessary for high tech startups firstly to survive, then to evolve. Probably, the most valued resources are knowledge and competences, as we are going to further analyze in the following paragraph.

### 2.6.2 Knowledge-based view

Directly derived from the resource-based view, the knowledge-based perspective isolates knowledge among the wider category of competences. According to this view knowledge is the most strategically significant resource for the firm[34] and this latter is considered as the repository of knowledge and competences.[35] The knowledge management process, if carried out properly, can lead to great competitive advantages. Knowledge creation, transfer and accumulation are the driving forces in the growth process of young firms.[36] With clear reference to the resource-based view, Penrose enhanced the role of knowledge acquisition in opening new productive opportunities, allowing companies to exploit them. Knowledge acquisition is also considered to be one of the greater incentive to enter into an interorganizational relationships, which we referred to in the previous paragraph. Alliances and collaborations are often aimed at learning development, with the sharing of competences and skills. All the cited arguments especially apply to new ventures. Savioz et al. enhanced the role of knowledge in the process of NTBF growth: being knowledge-based, they need to accurately manage the knowledge itself and its flow within the organization. Knowledge is the essential component for technology advances and innovations, which are the core assets of these businesses. It is recommended to implement frequent knowledge acquisition and continuous organizational learning in order to support sustainable growth.[37] Being their most significant resources, new ventures need to pay special consideration to knowledge and competences in the definition of their strategy. Knowledge is naturally linked to human capital. High tech startups are often founded by highly educated entrepreneurs with technical skills which are the responsible for the innovation process carried out. In this scenario, the connection between human capital and growth is obvious: without the human component innovation would be never achieved. Therefore, this correlation has been at the center of many research papers. A typical distinction is made between general and specific human capital. In previous literature, *generic*

[34] RM. Grant, (1996), "Toward a knowledge-based theory of the firm", *Strategic Management Journal*, Vol. 17, pp.

[35] B. Kogut, U. Zander, (1993), "Knowledge of the firm and the evolutionary theory of multinational corporation", *Journal of International Business Studies*, Vol. 24, issue 4, pp. 625-645

[36] E. Penrose, (1959), "The theory of the growth of the firm"

[37] Savioz, P., Luggen, M., Tschirky, H., (2003), "Technology Intelligence – Structuring it into the new technology based firm", *Tech Monitor*, pp. 41-46

*human capital proxy* is the education level, such as degree or PhD together with entrepreneurs' age. With *industry-specific proxy* literature instead refers to founders' previous experience in a sector that is similar or the same of the newly established NTBF, and self-employment or managerial previous experience as a proxy for *entrepreneur-specific human capital*.[38] Starting from the generic human capital proxy, educational background is considered by Cooper et al. as a primary determinant of US new ventures' growth.[39] Consistent findings are achieved by Westhead and Cowling and by Bruderl and Preisendorferin for UK and German NTBF respectively. However, the literature body concerning educational aspects as key determinant of growth is considered by many scholars as incomplete. For instance, the founders' nature of the education has not received much attention but Almus and Nerglinger provided evidence that NTBF whose founders have technical degree enjoy higher growth rates. This evidence is consistent for low, medium and high tech industries.[40] Concerning industry-specific proxy, prior experience in the same field of the new ventures is considered essential for the long-term survival and growth. Siegel et al. analyzed a sample of 1600 Pennsylvania startups and identified previous experience in the same sector as the only discriminatory factor between low and high growth firms. In the case of young high tech firms, previous experience in incubators has also resulted to be positively correlated with their growth.[41] Previous experience in a sector similar to the one of the new venture, can also be interpreted as professional background in a company with suppliers, customers and product/services that are related to the new venture's sector. Empirical evidence confirming it, was found by Gimeno et al.[42] They identified a strong positive correlation between post-entry performance of NTBF and an index capturing the similarity rate in terms of suppliers, customers and product/services. Lastly, research about entrepreneur-specific human capital has not achieved united results. While in Bates and Bruderl et al. studies there is no evidence of correlation between founders with previous self-employment or managerial experience and high tech startup growth, in Gimeno et al. work there is evidence about a positive relation between these

[38] M.G. Colombo, L. Grilli, (2005), "Founders' human capital and the growth of new technology-based firms: A competence-based view", Research Policy

[39] A.C. Cooper,F.J. Gimeno-Gascon, C.Y. Woo, (1994). "Initial human capital and financial capital as predictors of new venture performance". *Journal of Business Venturing*, Vol. 9, pp. 371–396

[40] M. Almus, E.A. Nerlinger, (1999), "Growth of new technology-based firms: which factors matter?", *Small Business Economics*, Vol. 13, pp. 141–154

[41] A.C. Cooper, A.V. Bruno, (1977), "Success among high-technology firms2, *Business Horizons*, Vol. 20, pp. 16–22

[42]J. Gimeno, T. Folta, A. Cooper, C. Woo, (1997), "Survival of the fittest? Entrepreneurial human capital and the persistence of underperforming firms", *Administrative Science Quarterly,* Vol. 42, pp. 750–783

two variables. Related to human capital are management team size and educational heterogeneity. A strong correlation between these two factors and the success of the company is registered in the market development phase.[43] However, the study carried out by Chamanky did not report uniform results across industries analyzed. The two management team features mentioned were found significant for the NTBF success especially in the electronics industry, but not in all industries.

### 2.6.3 Other relevant factors

The resource-based and the knowledge-based view are two of the most famous theoretical frameworks used to explain high tech new ventures' growth process. However, there are other theories dedicated to this topic. First of all, as the management theory has repeatedly taught us, a clear definition of the strategic direction is the main pillar for the company success and growth. With the term strategy literature about innovative companies refers to both technology and business strategy. It is argued that in order to gain and maintain a competitive advantage a balance between these two is required. This issue, investigated by Chamanski et al. in 2001, implies that the two strategies are complementary. Technology strategy is defined as the acquisition of new competences necessary for the development of technological advances in terms of products or services. Business strategy instead refers to both the appropriate timing to introduce products (or services) into a new market and to the development of internal competences required by external circumstances.[44] There is not consensus about the timing: some authors suggest that is better for the company to introduce the innovation as quickly as possible in the market; others instead argue that it is more appropriate to wait in order to evaluate the willingness of consumers to accept the new technology. The sector in which high tech startups operate are extremely dynamical and often unforeseeable. Therefore the correct timing for the introduction of a new innovation on the market should be determined according to the specific sector's dynamics.

Adopting the Storey view about the determinants of young and innovative firms' growth, we divide them in *firm specific*, *founders specific* and *external characteristics*.[45] Among the firm specific factors determining the growth rate of NTBF, Storey refers to the following findings. The growth rate of NTBF decreases with the age: in the first steps of their life cycle these companies

[43] Chamanski A., Waago, S.J. (2001) "The organizational success of new, technology-based firms"

[44] Chamanski A., Waago, S.J. (2001) "The organizational success of new, technology-based firms"

[45] Storey D. J., (1994), "Understanding the Small Business Sector", London

achieve higher growth rates if compared to the one registered in later stages.[46] Moreover, the start-up size is considered to be negatively correlated with the growth rate: evidence demonstrates that small firms grow faster than larger firms, because of their being *lean* and *flexible*.[47] Also the liability involved in the new venture plays a role: companies with limited liabilities are characterized by higher growth rates than companies in which founder personal capital is used. This is explained by the greater incentive entrepreneurs face in investing in projects of great potential but considered risky when they use external capital, rather than personal capital. They are more inclined to take some risks when the money invested are provided by someone else.[48] Finally the last firm specific growth determinant is represented by the links the company has with other firms, which may provide important competences and resources in terms of customers and suppliers relationship. One example could be partnerships with external firms enhancing the growth.[49] Looking at the founder specific characteristics, human capital of founders is considered to be positively correlated to the growth of NTBF. The complexity of innovative projects enhances the importance of the employees' competences. In addition, and related to human capital aspects, there is evidence that companies founded by a team rather than by a single individual are more likely to grow faster. This finding is based on the assumption that any possible knowledge deficits of one member may be compensated by the other team members. For what concerns the external characteristics influencing the growth of innovative companies, Storey identifies a strong correlation between local characteristics and the firm growth. In the context of external environment other authors, such as Daniel Shapiro et al., analyze the benefits caused by clustering. It provides great advantages for new ventures allowing access to specialized resources impossible to develop internally. Empirical evidence suggests that the distance from clusters has a negative effect on the growth.

Studies about internationalization contribution to the company growth are very few. However, Andreas Kiederich specifically investigated this topic in its article *"Investigating New Technology Based Firm Internationalization"*. Indeed, NTBF have oftentimes an intrinsic global potential:

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[46] Hall B. H., (1987), "The Relationship Between Firm Size and Firm Growth in the U.S. Manufacturing Sector", *Journal of Industrial Economics*, Vol. 35, pp. 583–606

[47] Wagner J., (1992), "Firm Size, Firm Growth, and Persistence of Chance: Testing Gibrat's Law with Establishment Data from Lower Saxony, 1978–1989", *Journal of Small Business Economics*, Vol. 4, pp. 125–131

[48] Stiglitz J., A. Weiss, (1981), "Credit Rationing in Markets with Imperfect Information", *American Economic Review* Vol. 71, pp. 393–410

[49] Nerlinger E., (1998), "Standorte und Entwicklung junger innovativer Unternehmen: Empirische Ergebnisse fuer WestDeutschland", Baden-Baden

their innovative products and services are intended to be accepted and appreciated globally, precisely because they are designed to serve this purpose. Kiederich refer to some authors arguing that in order to ensure long term survival, these companies need to approach the global market, being internationally competitive. The choice of internalization is also driven by the knowledge-based feature of high tech new ventures. Sales generated in domestic market may not be enough to support competitive levels of R&D spending.[50] Some findings also suggest that internationalization favors financial performance of international new ventures.[51] Finally, empirical research also identified other two reasons that should encourage NTBF to undertake the internationalization process, and these are: the strategic opportunities that the global presence may involves (such as lower manufacturing prices) and the interests created in foreign potential buyers.[52] All these factors make clear that also the internationalization is a significant determinant of the high tech startup success and growth.

Lastly, Wiklund identified four perspectives interacting in the process that leads NTBF from being small to medium sized. His conclusion is that all the elements characterizing each one of these perspectives are complementary and absolutely necessary for the company to growth. The cited perspectives are: the resource-based perspective, the motivation perspective, the strategic adaptation perspective and the configuration perspective. They differ one from each other mainly for the degree of responsibility for the change: whether is depending upon individuals or upon the environment. The resource-based perspective emphasizes how the opportunities of growing are driven by the internal resources of the company; the motivation perspective suggests instead that for the company to grow it is necessary the will of the managers to make that happen; the strategic adaption perspective focuses on the importance of choosing the appropriate strategy and structure related to the external environment, so the company ability to adapt to external circumstances; finally the configuration perspective highlights that the growth could be hampered if management is not willing to accept the new configuration assumed by the company once it is evolved in medium sized. All these perspectives are meant to interact in the process that leads to the innovation creation. Firstly, the innovative products or services designed by the high tech startup need to be commercialized in a market in order to be a success; thus the creation and the expansion of the target market is the first step in this *growing journey*. Secondly, innovations are designed

[50] Jolly, V.K., Alahuhta, M., Jeannet, J.P. (1992), "Challenging the incumbents: How high technology start-ups compete globally", *Journal of Strategic Change*, Vol. 1, pp. 71-81

[51] Oviatt, B.M., McDougall, P.M., (1996)," New venture internationalization, strategic change, and performance: A follow-up study", *Journal of Business Venturing*, Vol. 11, pp. 23-40

[52] Karagozoglu, N., Lindell, M., (1998), "Internationalization of small and medium-sized technology-based firms: An exploratory study", *Journal of Small Business Management*, Vol. 36, pp. 44-59

and realized only if internal resources like knowledge, machines, employees and capital are available. However, not all the necessary resources are internally owned by the company, so it also needs to organize and adapt its structure and organization to the external environment, called *innovation system*, in order to gain access to external ones. Nevertheless, the company will not evolve unless the people who are in charge want to. The willingness of the management team to grow is required. As it is clear, the cited willingness is a personal characteristic; nevertheless, it may be encouraged or discouraged by the context in which the NTBF operates such as culture and legislation. Innovation process is a cumulative and interacting learning process, so the company has to continue to innovate even after having introduced its products in the target market. According to Wiklund the conceptualization of the growth process is essentially based on five elements: the creation and expansion of a market, the growth willingness, the organization of the company structure, resources availability and the innovation system. As the perspectives, all these elements are interacting in the innovation process: each one is a necessary dowel to complete the path toward innovation. Four of the cited elements are placed within the company (creation and expansion of markets, growth willingness, structural organization and resources), while the innovation system is the environment in which the company operates and innovation is created. The arguments briefly analyzed above, are among the most significant determinants of NTBF growth and success. The literature seems to agree upon the great influence that internal and firm specifics factors have on innovative and young firms. Nevertheless, this analysis has also confirmed the dependence of NTBF to some external environmental characteristics, which enables them to survive and succeed. Precisely these external factors are what we can empirically identify with the VC firms' contribution in new ventures. Both the resource-based view and the knowledge-based view stress the importance of external rescources. In this scenario VC operations, in terms of capital injections and added value provided, perfectly represent what the literature has theorized. As it will be largely analyzed in the next chapter VC play a crucial role in their portfolio companies, providing the resources and competences that the cited literature perspectives consider to be essential for the new ventures' survival and growth.

## CHAPTER 3: Venture Capital firms' role in portfolio companies

### 3.1 The added value of VC financing

As confirmed by the literature review carried out in the previous chapter, new ventures necessitate of both internal developed and external acquired resources to succeed. Empirically, most of the external ones are precisely provided by Venture Capital firms. Despite the findings of one part of the literature, suggesting that Venture Capital firms can add little value to young ventures beside providing capital, Venture Capital is believed to be more by many authors. Gompers and Lerner defined Venture Capital in a way that particularly enhances the value-adding function they play. In their studies, Venture Capital is defined as a process which starts with the capital raising, proceeds with the investment phase, the monitoring and the adding value steps and it concludes the cycle with the exit of the fund from the invested company. With such definition, the value added by VC firms is highlighted. Indeed, it is believed that the value VC firms provide to startup goes well beyond the financing part. The contribution most valued by new ventures is actually the competences and know how VC firms introduce in their portfolio companies, the so called *added value*. It is through this value that VC firms enhance the growth process of young business allowing them to benefit of specialized skills that would not be available otherwise. The incremental value provided is the engine new ventures need to survive and evolve. The significance of the added value can be explained through the resolution of some market inefficiencies as well as through the coaching activity performed and the certification effect provided. These topics are further analyzed below.

#### 3.1.1 Adverse selection and moral hazard

We can attribute the existence of VC firms to market imperfections. Indeed, modern economic theory has highlighted frictions in capital market which make it difficult, if not impossible, for some companies to easily obtain external funding. In particular, adverse selection and moral hazard are the most frequently cited among market imperfections. With the former literature refers to the exploitation of asymmetric information in any relationship between two parties. As is physiological, in any transaction one party is in possession of better quality information than the other. This could lead to the benefitted party taking advantage of this situation and consequently damaging the other one. With the term moral hazard, we instead refer to the situation in which one party has an incentive to increase its exposure to risk because it does not bear the full costs of that risk. Startups are the companies most likely to suffer from these market imperfections, due to the already mentioned *opacity* that distinguishes the innovative component of their product or services. This in turn prevents traditional institutional investors to grasp and appreciate the

innovations proposed by high tech startup. This especially applies for banks, which are considered unable to evaluate *ex-ante* the quality of the project proposed businesses that lack a track of record.[53] For the same exact reason, banks are not able to evaluate *ex-post* the evolution of NTBF's projects. The above arguments are both considered to be alleviated in VC-backed firms, especially startups. Indeed, due to their sectoral specialization VC develop screening capabilities which allow them to properly judge the hidden value of the proposed projects, avoiding the adverse selection problem.[54] The funds received from VC will boost the invested firms growth, their profits and allegedly VC returns on investments. It is therefore clear the great incentive VC have to properly analyze new ventures' projects. As outlined in the first chapter, the screening process performed by VC is a meticulous and exhaustive process, which demands a lot of efforts. The completion of this activity somehow benefits companies, through the reception of highly valuable information about how the investor expects them to grow in order to become a feasible target. This learning process is considered to be beneficial also for those companies ending not to receive an investment from VC. Indeed according to Berlin, companies receiving funds after the screening process are enclosed in a 1-5 % range.[55] Returning to moral hazard issue, it is addressed by specific contractual clauses and methodologies adopted by VC to release additional funds during time: the so-called *stage financing*.[56] VC are used to finance the selected firms according to predetermined stages, called rounds. This method is implemented to protect their investments from opportunistic behavior of entrepreneurs, creating high powered incentives to achieve milestones previously set, in order to receive additional money.

### 3.1.2 The coaching activity

However, VC related benefits are not only confined to solve market imperfections; they also perform coaching functions.[57] High tech new ventures and more in general young firms are initially affected by what is called *knowledge gap*: they lack core competencies in fields such as strategic management, financials, marketing, human resources, budgeting and more. VC's activities fill this

[53] F. Bertoni, M.G. Colombo, L. Grilli, (2010), "Venture capital financing and the growth of new technology-based firms: a longitudinal analysis"

[54] Y.S. Chan, (1983), "On the positive role of financial intermediation in allocation of venture capital in market with imperfect information", *Journal of Finance*, vol. 38, issue 5, pp. 1543-1568

[55] M. Berlin, (1998), "That thing venture capitalist do", *Business Review*, issue Jan, pp. 15-26

[56] S. Kaplan, P. Stromberg, (2003), "Financial Contracting Theory Meets the Real World: An Empirical Analysis of Venture Capital Contracts", *University of Chicago*

[57] I.C. Macmillan, D.M. Kulow, R. Khoylian., (1989)," Venture capitalists' involvement in their investments: Extent and performance", *Journal of Business Venturing*, vol. 4, issue 1, pp. 27-47

gap advising portfolio companies. One example is the "*managerial professionalization*" documented by Hellmann. VC seating on Board of Directors allow them to introduce some practices such as the recruitment of external managers, the adoption of stock option plans.[58] In addition, the implementation of proper system of corporate governance, usually suggested by VC, makes venture capitalist-backed firms attractive target also for other investors.

### 3.1.3 The certification effect

Young businesses take advantage of the wide network VC firms generally are into. It is not unusual for the company to firstly deal with customers coming from the VC pool of contacts. The same applies for all those professionals which provide specialized services such as legal counseling, accounting services, head hunters and press service. In this case, VC facilitate the encountering of these trusted and experienced professionals with portfolio companies, in a sense granting for the people working in them. This is why the role of VC is also appreciated for its intermediary function. Linked to this argument is the last benefit provided by VC when investing in a company: the *certification effect*.[59] The venture capitalist endorsement is perceived by the market as a signal of soundness and quality of the business and the people in charge. This enables the invested company to gain credibility with other investors also in the perspective of a future IPO. There is evidence about the important role played by VC in ensuring IPO correct pricing. As documented by Megginson and Weiss VC-backed IPOs show smaller underpricing if compared to non VC-backed companies in the same sector and of the same size.[60] The arguments discussed above, are only some of the many ways in which VC provides additional value to the portfolio company.

As it is clear, Venture Capital firms do not act merely as financing partners; their presence in the board is nowadays considered crucial by high tech startup and more in general by young ventures. Through their highly specialized competencies and methodologies they are able to positively contribute to the day-to-day management activities, advising, monitoring and facilitating the fulfillment of the desired goals. VC operating is also considered of high value for the society, since they ensure the survival of companies responsible of creating social benefits, such as: innovation, high rates of employment and support to competitive dynamics, therefore promoting market

[58] T. Hellmann, M. Puri, (2002), "Venture Capital and the Professionalization of Start-Up Firms: Empirical Evidence", *The journal of Finance*, vol. 57, issue 1, pp. 169-197

[59] T Stuart, H. Hoang, R.C. Hybels, (1999). "Interorganizational endorsements and the performance of entrepreneurial ventures", *Administrative Science Quarterly*, issue 44, pp. 315–349

[60] W.L. Megginson, K.A. Weiss, (1991), "Venture Capitalist Certification in Initial Public Offerings", *The Journal of Finance*, vol. 46, issue 3, pp. 879-903

efficiency.

### 3.2 Literature review on value creation

This paragraph is intended to provide an excursus about the main stream of literature concerning the value creation of VC firms in new ventures. The research about value-added has concentrated on three main streams: the performance implications of the VC financing, value creation mechanisms and the determinants of the value creation. A deeper analysis of each topic will follow.

#### 3.2.1 Performance implications for high tech ventures

The monitoring activity performed by venture capitalists is considered one of the main benefits of being VC-backed. The fact that these investors have the right to closely monitor operations represents a great warranty for external investors, improving the credibility of the invested company. The effect of this phenomenon has been for long time the heart of research about how VC-backed ventures perform compared to non-backed ones. The hypothesis that the former achieve better results has been tested through the analysis of IPO pricing. One of the very first study about this topic was carried out by Barry et al. in 1990.[61] They analyzed 433 initial public offerings of VC-backed and not backed firms, reaching the conclusion that VC operations were negatively related to underpriced IPOs. However, they could not find statistically significant differences between venture capital and non-venture capital backed firms. A subtle different method was used to investigate the same topic by Megginson and Weiss: they selected matched samples of 320 initial public offerings of VC-backed firms and the same amount of non VC-backed. They demonstrated lower underpricing for the companies with VC funding.[62] Years later, some authors achieved different results: both Franzke[63] and Hamao et al.[64] found higher underpricing for venture capital backed firms, the first for German market and the second for the Japanese one. However, the contribution of VC firms to new ventures performance must not only

[61] B. Barry, C.J. Muscarella, J.W. PeavyI, M.R.Vetsuypens, (1990), "The role of venture capital in the creation of public companies: Evidence from the going-public process", *Journal of Finance,* Vol. 27, Issue 2, pp. 447-471

[62] W.L. Megginson, K.A. Weiss, (1991), "Venture Capitalist Certification in Initial Public Offerings", *The Journal of Finance*, Vol. 46, Issue 3, pp. 879-903

[63] S.A. Franzke, (2001), "Underpricing of Venture-Backed and Non Venture-Backed IPOs: Germany's Neuer Markt", *Advances in Financial Economics 10*

[64] Y. Hamao, F. Packer, J. Ritter, (2000), "Institutional Affiliation and the Role of Venture Capital: Evidence from Initial Public Offerings in Japan"

be interpreted in terms of IPO pricing. Analyzing long term performance in terms of survival profile, Jain and Kini found that VC-backed firms had greater chances of survival than non VC-backed firms.[65] At different results came the study of Manigart and Van Hyfte about 187 matched pairs of Belgian VC and non VC-backed firms.[66] Contrary to expectations, they were not able to confirm the hypothesis of higher survival rate, but they observed higher post-investment growth rate in terms of cash flow and assets for the five-year period following the entrance of the VC firm. The positive correlation between VC funding and growth rate is also confirmed by studies carried out by Davila et al. on a sample of 494 venture and non-venture backed companies.[67] Time to market of new ventures is another aspect proved to be related to Venture Capital financing. There is consensus among academics about the advantage that VC-backed firms have in term of shorter time to market, compared to non VC-backed ones. Lastly, Hellman and Puri documented how venture capital-backed replace with a faster pace initial management team with external CEOs to guide the new ventures. This phenomenon is called professionalization and it is found to be positively related with VC financing.[68] Concluding, it is clear that new ventures performance is believed to be positively enhanced by venture capitalists presence. Evidence form IPO pricing are not unanimous, but as far as time to market, professionalization and growth rate are concerned, findings seem to be consistent.

### 3.2.2 Value creation mechanisms

It is of interest also to analyze in which way venture capitalists provide the cited added value, the activities through which they contribute with their know-how and, among them, which are most valued by entrepreneurs. This is the second stream of literature concerning VC value adding forms. One of the first research about this topic was performed by Gorman and Sahlman on a sample of 49 VC. The study analyzed the ranked order of the ways in which VC provide value added.[69] The authors documented the following ranking: 1) assistance in obtaining additional finance 2)

[65] BA. Jain, O. Kini, (2000), "Does the presence pf Venture Capitalists improve the survival profile of IPO firms", *Journal of Business Finance and Accounting*, Vol. 27, pp. 1139-1176

[66] F. Manigart, W. Van Hyfte, (1999), "Post investment evolution of Belgian Venture Capital backed companies: an empirical study", *Frontiers of Entrepreneurship Research*, Babson College

[67] A. Davila, G. Foster, M. Gupta, (2000), "Venture Capital financing and the growth of start-ups firms", Graduate School of Business, *Standford University reasearch paper N. 1667*

[68] T. Hellman, M. Puri, (2000), "Venture Capital and the professionalization of Start-Up firms: empirical evidence", *Journal of Finance*

[69] M. Gorman, W. Sahlman, (1989), "What do venture capitalists do?", *Journal of Business Venturing*, Vol. 4, issue 4, pp. 231-248

strategic planning 3) management recruitment 4) operational planning 5) networking activities with potential customers and suppliers 6) resolving compensation issues. Some years later, Sapienza et al. investigated the differences in value added between VC firms in UK, France, Netherlands and US.[70] Their findings confirm that strategic roles are the most important in VC's view, followed by interpersonal roles and operation ones. This evidence was the same in all the countries considered. With strategic roles venture capitalists define financial and business advising performed through their presence in the board of directors. They also find evidence that the highest value added was provided in UK and US. With the support of some case studies, Fried and Hisrich documented the relationship between VC and entrepreneurs interviewing 14 startups.[71] The results showed six main areas where VC firms are believed to have influence, and these are: money, networks, operating service, moral support, business knowledge and image. From this brief literature review we can conclude that the main mechanisms used by venture capitalists to add value into invested companies are: advising activities, especially at the strategic level, networking and reputation enhancement. Of course, every VC firm has its point of strengths and so it will leverage on them in depleting its value added.

### 3.2.3 The determinants of value creation

The last stream of literature is the one dedicated to the factors determining value creation. Numerous studies highlight that the degree of value added contribution is influenced by some variables. These may be firm's characteristics, as well as board's features or the venture's riskiness profile. A concise review of the studies considered to be of most interest for this dissertation will follow. Sapienza dedicated a lot of efforts to this topic, analyzing both American and European scenario.[72] He first surveyed 51 U.S. venture capitalist-CEO and he found correlation between the innovation pursued by the venture and the involvement of VC firms. The higher the innovative rate of the startup's projects, the higher the communication frequency with the VC and consequently greater the value of the VC involvement. He performed the same analysis also in Europe, reaching similar conclusions. Europeans venture capitalists spent more time and dedicated more resources to highly innovative ventures and early stage ventures. We can only speculate on the reasons behind these findings. VC firms may be more interested in assisting those ventures

[70] H.J. Sapienza, A.K. Gupta, (1984), "Impact of Agency Risks and Task Uncertainty on Venture Capitalist-CEO Interaction", *The Academy of Management Journal*, Vol.37, N. 6, pp. 1618-1632

[71] V.H. Fried, R.D. Hisrich, (1994), "Toward a model of Venture Capital Investment Decision Making", *Financial Management*, Vol. 23, N. 3, pp. 28-37

[72] H.J. Sapienza, A.C. Amason, S. Amigart, (1994), "The level and nature of Venture Capital involvement in their portfolio companies: a study of three european countries", *Managerial Finance*, Vol. 20, N. 1, pp. 3-17

resulting to be more at the forefront in terms of projects delivered. Indeed, the success of the NTBF will advantage also the VC firms, that will be considered to be in part responsible of this success. Board of VC-backed firms has also been at the center of some studies. Fredriksen and Klofsten examined 41 new ventures and they found evidence that firms with equally distributed decision making power between CEO and the board had better performance.[73] Focusing on the relationship between agency theory and venture capital firm involvement, Barney et al. used a sample of 270 VC-backed firms to demonstrate that the level of control by VC firms is highly dependent upon the level of agency and business risks of the companies.[74] Similarly, Sapienza and Gupta documented that the VC firm involvement depends upon several variables, among which: extent of VC goal congruence with the one of the company, the degree of the CEO's experience, the degree of innovation of the new venture, the stage of development of the company.[75]

[73] O Fredriksen, M. Klofsten, (1999), "CEO vs board typologies in venture capital-entrepreneur relationships"

[74] J. Barney, L. Busenitz, J. Fiet, D. Moesel, (1989), "The structure of venture capital governance: An organisational economic analysis of relations between venture capital firms and new ventures," *Academy of Management Proceedings*, pp. 64–68

[75]H.J. Sapienza, A.K. Gupta, (1984), "Impact of Agency Risks and Task Uncertainty on Venture Capitalist-CEO Interaction", *The Academy of Management Journal*, Vol.37, N. 6, pp. 1618-1632

## CHAPTER 4: Empirical evidence on VC financing: the case of Softbank

The theoretical analysis carried out in the previous chapters, would be uncomplete if not corroborated by some empirical evidence. The following paragraphs are intended to provide a general overview of the most important VC firm in the world, together with the effect that its operating has on the VC industry. In order to critically analyze Vision Fund's business model and investment strategy, the empirical analysis of three of its invested companies is carried out. These were specifically selected because we believe their performance reflects some points of weakness
.

### 4.1 Softbank and the disruption of the VC industry

The decision to analyze the Softbank case study moves from a simple matter of fact: Softbank's venture capital fund, the Vision Fund , is the biggest VC firm investing in high-tech startups ever. The fund has been active since 2017 and it has already invested in more than 70 companies. The investment strategy adopted is quite unique and it is also criticized by the most. Nevertheless, it is undeniable that this strategy has brought some big returns to Softbank, like the one earned with the investment in Alibaba. Thus, it is worthy to be analyzed in order to capture the points of strength and weakness embedded in it. The goal of this chapter is to discuss the investment strategy and business model applied by Softbank through the analysis of some of its portfolio companies' performance. Softbank Group Corp. is today one the biggest public company in the world, more precisely at the 36$^{th}$ place, as reported in 2017 by Forbes in its Global 2,000 list. It was founded in 1981 by the eclectic character of Masayoshi Son, initially as a distributor of packaged software. At that time he only had two employees, which soon after the beginning of the business decided to leave him because of its called "absurd" way thinking. He told them in few years Softbank would have been able to count net sales in trillion. He then started to invest in what he considered to be the companies of the future, such as Yahoo and Alibaba. In particular, the $20 million invested in the 2000 in Alibaba were one of its most profitable investment. When the company went public in 2014 for $60B Softbank earned a return of 300,000%. Softbank owns today 29.4% of the company for a value of $125 billion, being its major shareholder. Masa decided to invest in Alibaba when Jack Ma, the founder, did not have any business plan, zero revenues and only 35 employees. The same Masayoshi stated many times that his decision to invest in Alibaba was an intuition. Precisely this *gut-driven* way of investing, it is what makes Masayoshi the character he is. He is profoundly convinced that the Artificial Intelligence is the largest revolution in human history and he follows this belief in defining its investment strategy. He has a big goal in mind, that is to contribute to people's happiness through AI. To this end he established the Vision Fund: today biggest Venture Capital Fund investing in high-tech startups. Masa's corporate philosophy

of “Information Revolution, Happiness for Everyone” comes with the wish that people around the world will lead happier, more fulfilling lives through the technology-empowered services and products his portfolio companies will provide. The Vision Fund have $100 billion provided by Masayoshi but also by some giants like Apple, Qualcomm, Sharp and by two sovereign wealth funds that contributed nearly half of the fund, namely Saudi Arabia's Public Investment Fund and Abu Dhabi's Mubadala Investment Company. This fund has invested in 76 companies so far and its smallest bet amounts to $100 million. The investment made are real bets, since the strategy followed by Masa is more a “work of art”. He does not follow any specific and fixed strategy, he rather prefers to invest huge amount of money in companies he considers to be disruptive. Many consider Softbank’s operations a disruptive phenomenon in the Venture Capital Industry. He completely revolutionized the way of investing, starting from the strategy applied to the amount invested. VC firms generally tend to invest moderately and in more companies; Softbank instead invests hugely and in fewer companies. Softbank has not disclosed its investment strategy, but its way of conducting investments have consequences on the whole VC industry, the market and its trends. As reported by many sources, Masa’s big checks have helped inflate many pre-IPO companies’ valuations, making other VC to either write bigger checks or drop out the deal entirely. This is why Softbank is considered to have disrupted the VC industry: it reshaped the way of investing in late stage startups, with its “winners take all” strategy. [76] The disruption of late stage investment brought by Softbank is compared, according to Softbank’s managing director Jeff Housenbold, to the disruption made in early stage investment by Andreessen Horowitz about 10 years ago. Confirmed by Deep Nishar, the strategy of Softbank is successful because they are willing to make some long term bets fueling the growth of promising companies with $100 million and more. As stated by him, a $10 million investment is not enough to achieve the disruptive industry transformation that the Vision Fund expects. For this reason the fund invests massively in the companies it considers promising. They look for companies with the potential to be “global powerhouse”; so they invest in these companies in the moment they are not yet global leaders. However, the participation of the Saudi Arabia’s sovereign wealth fund further complicates the matter. Every company approaching to Vision Fund and its financing, must accept to be in some way tied with the Arabic sovereign wealth fund. This is sometimes a source of problems, like in the case of Opendoor. The company accepted $400 million investment by Vision Fund, despite its CEO’s comments that SoftBank’s investment strategy “doesn’t work.” He also stated to have some reservations about the sourcing of capital provided by Softbank, considered to be “questionable”.

[76] R. de Leon, “How SoftBank and its $100 billion Vision Fund has become a global start-up machine”, *CNBC*

### 4.2 Vision Fund portfolio companies

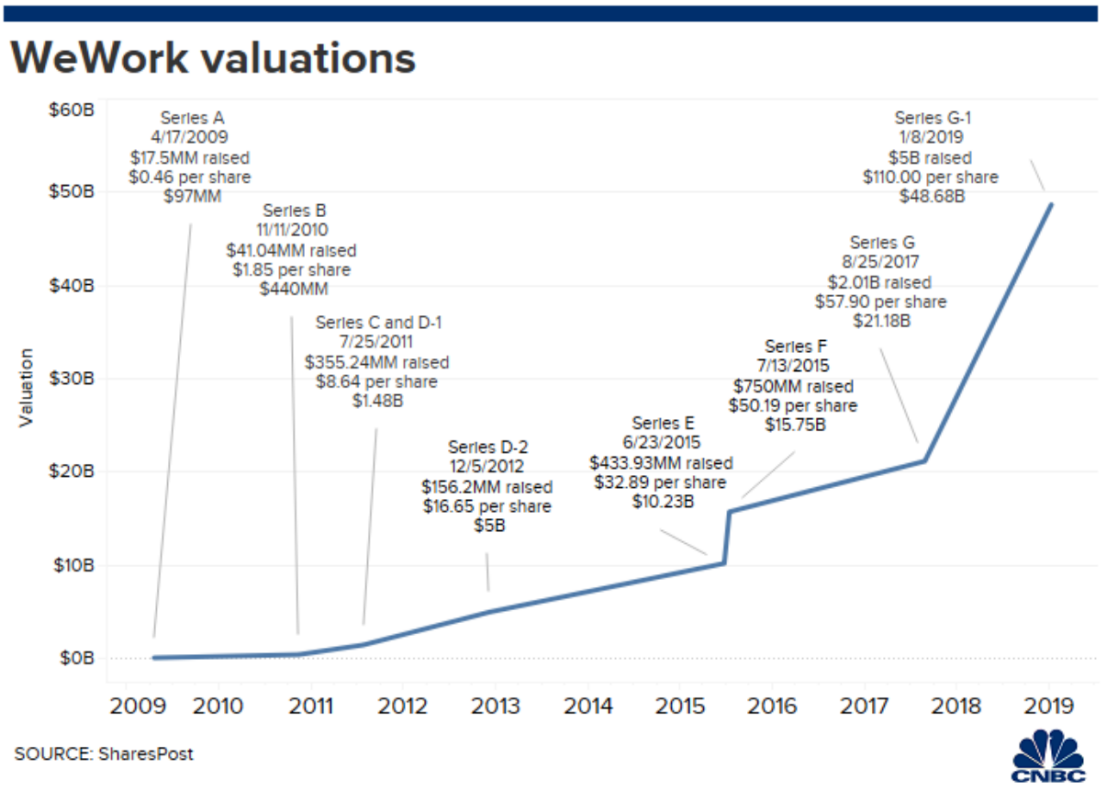
Until recent times, even if the investment strategy of Softbank was not completely grasped by the market, everybody could agree about the greatness of its financial results. Nevertheless, WeWork missed IPO and Uber performance casted doubts about the efficiency of the same. This paragraph is dedicated to an empirical analysis of some Softbank's portfolio companies performance. The sample analyzed is composed by: WeWork, Uber and Slack. These companies were chosen because they present some points of weakness of the Vision Fund way of working.

#### 4.2.1 WeWork and the missed IPO

It could be convenient to start the analysis of Softbank's portfolio companies from WeWork, recently involved in a lot of rumors and news. The coworking space company, funded in 2010, has its headquarters in New York City and its parent company is called The We Company. It had a stunning growth during its path, starting from a single spot in NY to 528 locations displaced in 111 cities. It was born as working spaces provider for young entrepreneurs and startups, but it matured along the way. Today 40% of its business consists in collaboration with important companies like Blackrock and Microsoft. Its valuation has grown commensurately over the years: in 2014 it was valued $1.5 billion and it quickly attracted a lot of investments. In December important names such as Goldman Sachs and JP Morgan participated in its series D financing round providing $355 million, along with the $5 billion valuation. Softbank firstly invested in WeWork in 2017 after a 30 minutes conversation with its CEO Adam Neumann, in which he convinced Masa to invest over the years around $10.65 billion. It was the additional $2 billion provided by Softbank in January 2019 that secured WeWork a $47 billion valuation, winning the title of tech world's most highly valued startup. From this brief introduction it is difficult to imagine that just few months later the valuation of this promising company decreased to $8 billion and that its CEO was forced to step down. In order to understand what really happened, a crucial fact must be clarified: the downfall began with the IPO filing. On August 14$^{th}$ WeWork officially filed its IPO paperwork through the file called S-1, available on the SEC website.[77] Clearly, there was a lot of hype around the insight embedded in this document. It was exposed to a detailed scrutiny by investors, financial institutions and media. In that very moment the already existing doubts about WeWork's profitability became a certainty. After only 6 weeks the IPO was called off, Neumann stepped down as CEO and the valuation of the company had fallen more than one half. Let now analyze which circumstances led to this catastrophic situation and what could have been avoided and predicted by the market, but especially by Softbank. There were three main matters of concerns

[77] S-1 file. IPO prospectus, SEC.GOV

that could have been a wake-up call if only considered: the huge losses of the company, its business model and the corporate governance. The company was reporting losses since very long time from $400 million in 2016 to $1.9 billion in 2018, registering $700 million losses only in the first half of 2019. The profitability of the company was questioned by many especially after the warning contained in the prospectus for the IPO, where the parent company states: "*We have a history of losses and, especially if we continue to grow at an accelerated rate, we may be unable to achieve profitability at a company level for the foreseeable future.*" This statement only confirmed what investor were already skeptic about: WeWork was not even close to be profitable and this circumstance, even if supported by great growth projections, was not appropriate for a $47 billion valuation. The next natural question everybody could ask is: where this valuation came from? The company's valuation evolution, shown in the image below, went from $97 million during its Series A round in 2009 to $47 billion after the funding round G-1 just ten years after. In 2018 the company was valued at $20 billion soon after the first investment of $4.4 billion made by Vision Fund. The real increase in valuation happened after the Softbank's investment in the period between 2018 and 2019, that was around $5 billion according to some sources. In that occasion WeWork's valuation went from $20 billion to $47 billion, a tremendous increase. For this reason many investors believe that Softbank has inflated the valuation. In other words the presence of the Vision Fund among Wework's investors helped inflate the company's value. In order to find the last "real" valuation of WeWork you have to look back to 2016, when the company was valued $16.9 billion after the Series F round led by one of China's largest hotel companies, Shanghai Jin Jiang International Hotels.




This could explain why, immediately after the disclosure of its projections and assumptions, the valuation went from $47 billion to $8 billion. The previous valuations were not determined by financial results or company's operations, but they were rather the result of the market hype concerning Softbank's presence among investors. This belief is by now spread in the market; the same Masayoshi defined some weeks ago his investment in WeWork as a "mistake". He justified the investment decision saying to Forbes that "*You get excited with an entrepreneur who seems great but does not necessarily deliver a great return. We paid too much valuation for WeWork, and we did too much believe in the entrepreneur*". The CEO character and personality is another concerning point, strictly related to the corporate governance. Neumann, the CEO of WeWork, has always been known to be undisciplined. He was also involved in some scandals after the drafting of the S-1 file. In this document it was revealed that Neumann owns several properties that WeWork leased from him and that he sold the rights to the word "We" to WeWork for nearly $6 million. He has since given back the money for the naming rights and committed to giving his profits from the related real-estate deals back to the company. This circumstances together with other antics involving Neumann smoking weed on a private jet and serving employees tequila shots after discussing layoffs, induced Masa to force him to step down as CEO on September 2019. This corporate governance issues were well known, since the time of the Softbank's investment. For this reason Masa's recent statement about his mistake in investing in WeWork has very much

to do with the misjudgment of Neumann character. The two of them were particularly close, and probably the mutual respect obfuscated negative aspects of Neumann. However, as reported by the same Masa, this should never happen in VC deals. The judgment should be as objective as possible. For this reason many believe that the 30 minutes due diligence conducted on Neumann by the Vision Fund before investing in WeWork was not enough. Another point of weakness, which led to the debacle of WeWork, is its business model. The first who revealed the business model and the pitch deck used by WeWork to convince investors was BuzzFeed in 2015. In these documents anyone can clearly notice the extremely optimistic assumptions on which the business model was based. Just to make an example, WeWork estimated its potential market to be about $3 trillion. What probably not everybody noticed at that time is that this assumption considered as a potential "member" anyone who worked at a desk in an American city where there was a WeWork. In non-US cities with WeWork building the estimate applied to anyone with an office job. Clearly, these are very optimistic but also unrealistic assumptions. Probably what WeWork used to justify these projections was the fact that they pictured the company as a revolutionary high tech startup in the real estate industry. This method, together with a great storytelling, enabled Neumann to lock down massive rounds and earn what is essentially a real estate company the privilege of being discussed as — and valued like — a Silicon Valley software startup. However, its business model has nothing to do with software, it has instead real estate written all over. WeWork does not own real estate, but instead takes long-term leases and then rents it out for the short term. So in order to make a profit, it has to charge its members more than it pays landlords. WeWork has also relied on additional revenue from raising office rents, selling services like health care, collecting commissions off its real estate deals and signing people up for its co-living product. However, what Softbank should have valued is that this business model is what is usually called "asset heavy, platform light". This means that it is based on arbitrage opportunity between long term leases and short term renting. Nevertheless, this is considered a huge risk: whenever the economy suffers for a down, the demand for renting goes down too, but WeWork must continue to pay long term leases, even in the absence of rent demand. In addition WeWork is not a platform, even if the company liked to sell its business like one citing more than 170 times this term in the IPO prospectus. What probably Softbank and WeWork's other investors should have considered is the scalability of the business, that would have been guaranteed in the case of a platform-based business model. In that scenario WeWork's business model could have been defined as asset light, platform heavy. Instead of leasing spaces from real estate owners, WeWork could focus on facilitating the match between demand (companies needing coworking spaces) and supply (real estate owners). In this way its operating would be closer to Airbnb or Oyo, two of the most valued platforms in the market. However, WeWork is to all intents and purposes a real estate company and it also presents its

typical issues exposed by the company itself in the S-1 file. These risks are: the city concentration risks, lease negotiations which start to be uncommon in the countries WeWork is expanding, the cost of renewing the buildings it leases. Summing up, why did Softbank underestimated these risks in valuing WeWork? All the necessary elements to predict the overvaluation of the company were there, as it was confirmed by the valuation decrease soon after the disclosure of what should have been already known by Softbank. We can only speculate and make the following thoughts. First of all, Masa closeness to Neumann did not allow him to objectively judge his character and the business. The investment in WeWork was highly discouraged by the then Softbank's president Arora. He deeply scrutinized WeWork business model in 2016 and came to the conclusion that the company's valuation of $8 billion was unrealistic. Nevertheless, Masa decided to pursue, being completely compelled by Neumann's character, the business idea and growth projections. In addition, WeWork intention to penetrate Chinese market played a role in convincing Masa. The company cited China 173 times in its IPO prospectus. Other US tech companies usually do not try to enter in the Chinese market but WeWork wanted to, having already a joint venture with ChinaCo. If it is true that Softbank misjudged the investment, it is also undeniable that it was backed by other WeWork's important investors such as: Morgan Stanley, J.P. Morgan and Goldman Sachs. They committed to be able to find buyers willing to pay between $60 billion and $100 billion for the company. According to Damodaran the mistake of Softbank was due to a combination of greedy and arrogance. Damodaran valued the company to $14 billion, a number very close to the value of the company just before Softbank first investment in 2017. All these factors certainly played a role in the valuation of WeWork, but basically what really Softbank and the other investors did not grasp is that WeWork is not a tech startup. It may be presented like one, but in reality its business model belongs to a real estate company as confirmed by the company itself when, among the risks faced, it listed all real estate related issues. Probably, the Silicon Valley fever and Masa's 300-years plan pushed him to always search for the next Alibaba. It is undeniable that many startup reporting huge losses ended up dominating the market with great profitability. However, WeWork case is a great lesson about business model centrality. Assumptions make all the work in a company's projections, thus investors must be sure about their reachability before investing such huge amounts of money. WeWork has been proven not to be ready for a public market debut but Masa is fiercely defending its opinion, as he recently reaffirmed its belief about WeWork huge profit in the future. This was also confirmed by the rescue package Softbank agreed to set in favor of WeWork in October 2019. However, the VC recently announced it will not proceed with the completion of the rescue. Indeed, according to Masa several conditions were not met by WeWork, forcing Softbank to retire from the deal. The package included $3.3 billion of share tender rescue and the possibility for the CEO Neumann to sell up to $970 million

of shares, with the condition to give up the control of the company to Softbank. As part of the tender, the Japanese group had planned to purchase shares at $19.19 each. In addition, SoftBank agreed to lend Neumann about $400m to replace a loan he had defaulted on and pay him a $185 million consulting fee as part of the emergency bailout. WeWork has already received a $1.5 billion cash injection from SoftBank. The company also secured a new credit line from Goldman Sachs, which was guaranteed by SoftBank. At the moment this dissertation has been written there are no further news or comments by the parties about the deal mentioned. For sure Softbank will make some resistance in completing the deal, also appealing to the pandemic situation and its consequences on real estate companies and labor market.

### 4.2.2 Uber and the failed IPO

After WeWork's missed IPO case, this paragraph is dedicated to the analysis of Uber. Unlike WeWork, Uber "successfully" completed the IPO process on the New York Stock Exchange (NYSE), being today a public company. Nevertheless, its performance just after the IPO did not satisfy the public market, with important consequences on Uber's stock price and valuation. Uber was founded in 2009 and it soon became the highest valued private company in the world, thanks to its fast growth track record. The ridesharing company transformed an entire industry by using technology to enable individuals to provide transportation for others using their own vehicles. It is today available in 69 countries and it counts for more than 7 billion rides per year. Uber went public the 9$^{th}$ of May of last year, 2019. The price range set for the IPO was initially between $48 and $55 per share, with a corresponding valuation around $120 billion. However, the Lyft's disappointing debut on the public market occurred just two months before affected Uber's expectations. Therefore, initial IPO price was set to $45 per share with an offering of 180 millions of shares. The IPO raked $8.1 billion bringing Uber's valuation to $75 billion. Uber performed the biggest IPO since the one of Alibaba in 2014, positioning itself at the third place in term of biggest IPO ever among tech companies, after Alibaba and Facebook. However, the IPO post performance has been really frustrating, touching a peak of $47 per share in May 2019 and reaching $15 to its lowest on March 2020, arriving today to be around $30 (July 2020). The bad performance presented in the last month was surely affected by the COVID-19 situation, which hugely impacted on Uber. The company reported that the pandemic caused a 80% drop in its business; it was forced to lay off more than 6,000 employees, which represents around 14% of its global workforce. Nevertheless, the stock's bad performance was a fact, known since last year. The company unprofitable path was reiterating since the beginning of its history but this did not seem to scare investors. The company reported losses for $3 billion in 2018 and they increased to $8.5 billion in

2019.[78] Silicon Valley actors are used to invest in loss making companies, because they know that it may take years before their disruptive changes are understood. Indeed, even before the IPO Uber was considered to be about to join an ugly but exclusive club: "unprofitable companies worth more than $50 billion".[79] Then why the IPO was a failure? The market, populated by risk adverse investors did not grasp the yet "work in progress" business model of Uber. A situation that highly resembles the one faced by WeWork, that was stopped just before the debut on the public market. The cause of the failure in the process that led Uber in the public market are summarized below. The IPO was somehow inflated by the hype created around one of the most expected IPO. Everybody knew the ride hailing company was reporting huge losses, but being privately held it was evaluated by VC funds for about $70 billion. Its financials disclosed just before the IPO, were deeply scrutinized by investors. What they saw was a complicated situation, with great growth projections but an unclear path to profitability. The definition of Uber's business model was still ongoing, as nowadays after all. If this did not represent a problem for VC fund in the evaluation of the company, it surely scared investors. For sure there is a sort of sentiment in the market about a "Silicon Valley's bubble", ready to burst. In addition, the company's financials had three main red flags that scared the market:[80]

1. The cost of revenue: in the income statement the cost associated with booking fees are called cost of revenue. This indicator, represents one of Uber's largest expenses and it may be difficult for the company to reduce it, since contractors may require higher fees and the number of drivers will likely increase in order to fuel the growth;
2. Long term debt: it went from $1.423 billion in 2015 to $5.707 billion in 2019, with an increase of 75% in only five years. The fear of many investors is that even with the $8 billion raised during the IPO Uber will soon need additional cash in order to cover for these long term obligations;
3. No profit in sight: it is just wrong to assume that investors would buy Uber's shares only because it is a tech company, participated by some of the most important VC funds in the world. The market valuation of a company differs a lot from the one conducted by a private party. Investors which scrutinized Uber's financials did not even see a clear path to profitability and this represented a great limit to invest.

[78] 2019 Uber Annual Report

[79] A. Levy, "Uber will soon join an ugly but exclusive club: Unprofitable companies worth more than $50 billion"*, CNBC*

[80] J. Bort, "3 reasons why Uber had such a 'weird' and terrible IPO, according to a portfolio manager who wouldn't buy the stock", *Business Insider*

Then, it is necessary to consider some of the assumptions Uber made to convince investors to believe in its business model. Investors did not consider them feasible and this affected the performance of the IPO. First of all, they estimated a total addressable market of $12 trillion including personal mobility, food delivery and freight shipping. This data is however very difficult to validate. If this amount of TAM would be achievable, you would expect Uber's revenue YoY growth rate to be characterized by a constant increase. Nevertheless, Uber's revenue YoY growth has been always declining from 50% in 2015 to 20% in 2019. One of the main reason is that as Uber continues to protect and expand its market share it is forced to give up a larger share of revenues to drivers and restaurants. This is demonstrated by the misalignment between Gross Booking and Core platform adjusted net revenue. The first one indicates the total amount of money spent by users on the Uber platform while the second one is a revenue measure that subtracts drivers or restaurants pay and incentive from gross booking. In the fourth quarter of 2018 Gross Booking increased by 11% but Core platform adjusted net revenue declined by 1%.[81] Another important limit to Uber's profitability are drivers: unless the company squeezes drivers incentives it can not increase market share and consequently profitability, as highlighted in the company 2019 annual report.[82] Uber states to be forced to make some tradeoffs between the rights and interests of the different users involved in the platform. Indeed, higher the number of drivers using the mobile app, wider the choice offered to consumers and higher revenues. A second point of weakness is Uber's competitive advantage. According to the ride-hailing company its competitive advantage stems from the so called network effects. In the S-1 file it clearly states that the strategy is to create the largest network in each market so that it can benefit from the greatest liquidity network effect.[83] A product is said to have network effect whenever more usage of the same by any user increases the product's value for other users. Uber believes that if it is able to increase the user base, then it will benefit from network effect that will ensure long term competitive advantage. As it is clear, riders want to use a platform with lots of drivers, which minimizes wait times and drivers want to use a platform with lots of riders so they have consistent fares. However, this network effect is still to be proven and it probably seemed to be a little too vague to public market in order to say with certainty that Uber currently detains a competitive advantage over its rival. In addition, it has little sense to talk about network effect in ride-hailing industry because:

[81] Uber 2019 Annual Report

[82] Uber 2019 Annual Report, pp. 14

[83] S-1 Uber File, pp. 152

1. The switching cost a driver or a rider incur are very low. Indeed, it is easy for both the players to use multiple ridesharing app. This is demonstrated by the fact that 70% of Uber's drivers also work for Lyft. The company itself identified this factor as a source of operating risk in its latest annual report;
2. Scale effects are low too. The 23% of Gross booking in 2019 were generated in 5 main metropolitan areas including New York, San Francisco, Los Angeles, Chicago and London. This means that if Uber is not able in the next future to increase this percentage or to penetrate other cities, the network effect mentioned above will not make a difference in Uber's profitability.

The ones just mentioned are the main points of concern identified by the market and investors in Uber's business model and financials, which prevented the company from a great IPO performance. However, it is necessary to say that the IPO was not a disaster. Uber raised a considerable amount of money which seemed to be few if compared with the pre-IPO valuation. Again this is due to the overvaluation provided by VC funds and private investor. As mentioned many times now, the valuation of private actors consider such different things from what the public market look for that a unicorn may not perform at its best on the public market. For this reason Uber's IPO is said to be a failure: because it was waited from long time by the market and the hype around it was high.

### 4.2.3 Slack's direct listing

Differently from the two previous companies Slack, one of the most used workplace messaging service, chose to enter into the public market with a direct listing (DPO) rather than with a traditional IPO in June 2019. Following Spotify's experience, the company decided not to collaborate with investment banking in the process of becoming a public company. Slack was founded by Stewart Butterfield, the co-founder of Flickr, in 2013. In the first week it reached 120.00 daily active users with a corresponding valuation of $1.2 billion in late 2014. This amount made Slack the fastest growth startup ever. In October 2019 the company disclosed the achievement of 12 million daily active users. Softbank invested in the company an amount near to $355 million between 2017 and 2018 when it was valued $5 billion. At the moment of the DPO the company was valued around $7 billion and it had set a reference price of $26 per share. However, it started trading at $38.50 and closed at $38.62 valuing the company $24 billion. The first impressions on the Slack direct listing were positive since it surged 48.5% on the NYSE. The company presented itself with $400.55 million of revenue and a loss of $138.9 million for the year ended January 31, 2019. It had raised $427 million in 2018 during its latest financial round. However, Slack's stock has rapidly lost altitude reaching a low on the first January of 2020 with a

price of $21. This paragraph is dedicated to the analysis of what happened, what changed the market sentiment around the company. As for Uber and WeWork the concerns expressed by the market regard the uncertain profitability. But in this case other two factors played an important role in determining the stock performance: the competition faced and a SaaS repricing. Starting from what Slack performance has in common with the other two companies analyzed, it is no secret that the company reported losses since the beginning of its business. Even though, its revenues are constantly increasing. For the fiscal year of 2020, ended in March, the company reported $181.9 million with a 49% YoY increase. GAAP operating losses were $588.3 million corresponding to 93.3% of revenues compared to $154.2 million loss in fiscal year 2019 or 38.5% of total revenues. Therefore, the percentage of loss over revenues is still increasing, casting doubts about Slack profitability. The same management team expressed concerns about this aspect. The doubts about profitability were fostered by the strong competition faced from Slack by players like Google and Microsoft. Differently from the other two cases analyzed, investors' valued that, despite Slack was beating expectations on earnings and revenues, the company does not have the ability and financial strength to overcome competition. For this reason the belief of an overvaluation started to spread in the market, leading to a stock price fall. The third element is the repricing at which SaaS companies were exposed. These companies are commonly valued on revenue multiple, differently from the traditional P/E approach followed for other types of business. The reason lies in the fact that for SaaS companies, current earning is not a good indicator of future cash flows because customer acquisition costs are typically upfront expenses and most of these companies are still in an aggressive growth stage. In the months immediate following the Slack's DPO, SaaS companies were repriced by the market, from a 11x enterprise value/ revenue to a 10x. This slight change in pricing, may partially explain the stock performance just after the DPO. In addition, Slack has also been involved in an investigation from 4 law firms, which claimed Slack failed to adequately disclose financials. In detail, the Schall law firm invited investors which suffered from $100,000 in losses to come forward in order to establish a class action. Lead plaintiff Fiyyaz Pirani claims that he and other Class members *"suffered losses to the value of their purchased shares as a result of misstatements or omissions of material facts in the Offering Materials."* [84] The information they refer to is about service outage, competition from Microsoft Teams, scalability and growth strategy. In addition they claim that Offering Material lacks of adequate information about Service Legal Agreement (SLA) that Slack has established with its customers. This is relevant, according to the plaintiff and also to the court, because Slack did not disclose that the *"SLAs provided that failing to meet the guarantee would cost Slack a credit*

[84] K. Errick, "Slack direct listing lawsuit partially dismissed", *Law Street*

*payout multiplier of 100 times what each customer paid, regardless of whether the customer complained or was even affected by the outage".* As for the competition by Microsoft Teams, the plaintiff alleged that, while Slack has identified Microsoft as one of its main competitors, it downplayed the same by saying that *"we are uniquely positioned to more rapidly innovate and respond to new technologies and customer requirements than our competitors".* The plaintiff claimed this statement does not consider the competition that Slack was facing even before its expansions in enterprise customer service. However, in this case the court founded the allegation immaterial, since Slack is not required to give figures or to explain competitors' market power.

In conclusion, what we can say about Slack's DPO performance is attributable to two factors: the unclear path to profitability and the strong competition faced. Again, these issues were not a point of concern for VC firms which have invested in the company. However, they represented a strong limit according to the market. This judgment misalignment is what caused the stock to decline registering a bad performance. In addition, lawsuits brought up against Slack consolidated the doubts of the market. Essentially, investors adopted for Slack the same judgment of Uber and WeWork: the promise of great profitability, even if backed by great revenue growth rates, is not enough. In the case of Slack, competition faced played a central and crucial role in determining the stock performance. The unstable profitability together with the threat of Google and Microsoft, caused Slack's stock to appear not so compelling to the market.

### 4.3 Critiques to Softbank's strategy

The analysis of the three companies conducted so far, has highlighted the Vision Fund's investment behavior. The VC fund, with its 300-years plan, has invested mainly in asset light businesses, platform software driven and with increasing amount of data processed. The main goal of the fund is to invest in companies which will disrupt their original industry. In order to do it, the checks it writes are way bigger than other VC firms. This assure Softbank to fuel the growth of the invested companies. This is a matter of fact, confirmed by the growth rate of the company analyzed. The massive growth rates registered by them, is what leads Softbank's CEO to believe they will revolutionize the world and the way of living. However, critiques to this massive cash injections have naturally emerged. First of all, the big bets made by Softbank are believed to have inflated the whole VC market. Masa's investments have helped inflate many pre-IPO companies' valuations, making other VC to either write bigger checks or drop out the deal entirely. This phenomenon, if protracted in the long run, could lead to a "tech bubble", similarly to what happened with the dot com companies. If it is true that many winners, like Amazon, did report huge losses on their financial statements for many years in a row, it is also true that they had a clear business model, ready to be adapted to the up and down of the economy. What investors

claim to be missing in Softbank's invested companies is a clear profitability path showing the company will eventually turn to profit. But what scares the most is the business model behind these companies, considered to be too exposed at exogenous phenomenon and too often not well defined. For example, many argued that according to WeWork business model, the company should not be considered as high tech but rather as real estate. In turn, the risks at which the company is exposed when the economy is down are totally different from the ones at which a software company is exposed. Softbank on the other hand, has the presumption of treating every invested company like a software one, even when their core business has nothing to do with software. This would in turn create a big hype around the company, inflating its pre-IPO valuation. In addition, Vision Fund presence among startups' investors have also influenced founders' behavior. Softbank typically encourages founders to think bigger, act crazier and annihilate their competitors. In some cases the Vision Fund invested in direct rivals, Uber and DoorDash for example, leading both companies to aggressively burn cash to keep up with the other on customer acquisition, market expansion and recruiting top talent. It encouraged entrepreneur to take risky decisions which often ended badly. The judgment of the Vision Fund around the management of the invested companies is also criticized. As stated by Masa, he often "fall in love" with entrepreneurs' way of thinking and how they can visualize their product in the future market. For this reason, he often decides to invest without a proper scrutiny over leadership ability and governance. This can lead to big problems, as demonstrated by the WeWork case, in which Softbank has been forced to make the CEO step down because of its inadequate behavior. Nevertheless, Softbank declines all the critiques moved to its strategy stating that is not easy for the rest of the world to understand their 300-years plan, according to which they fund companies which will disrupt entire industries. In order to do it, $10 million investment is often not enough. Therefore the fund invests massively in the companies it considers to be promising. In their long term perspective they define themselves as patient investor. As stated by Rajeev Misra, CEO of Softbank Investment Advisers, they reach for a 3x return when they invest. For this reason they are willing to deploy big amount of capital and to wait long periods of time before registering a profit. They also do not deny any of the bets they made: Masa admitted they committed a mistake with WeWork especially in the valuation of the CEO's character, but they continue to be convinced that the company will be a success one day. They do not expect the market to understand their strategy, so they continue to invest in apparently money losing and disruptive companies fueling their growth and valuations.

Despite the critiques moved to Softbank's strategy, what we can conclude after the analysis conducted in the previous paragraphs and chapters is that the Vision Fund does not invest meticulously following the VC typical business model. We have highlighted the steps according

to which funds decide whether to invest in a new venture, particularly enhancing the centrality of the due diligence phase. The disappointing performance registered by WeWork, Slack and Uber is the proof that the due diligence was probably not carried out correctly. We may speculate that the qualitative as well as quantitative criteria a VC fund should follow in its investment decisions were not properly weighted in these three cases. Little weight was assigned to financial sustainability, profitability and business model consistency. Conversely, the Vision Fund have favored the gut component that inevitably characterizes every investment decision, letting personal relationships, emotions and excitement interfere in the deal. These in turn have influenced the valuation of these companies, leading to apparently unjustified billionaire deals.

Moreover, we can deduct that public markets are the biggest obstacle to the success of the Vision Fund. Long term ambitions of the investment fund is colliding with short term expectation of the public market, creating obstacles to the companies' performance. It is not uncommon for the companies participated by Venture Capital firms, to have high pre-IPO valuation which then resulted in big fiascos once entered the public market. The problem lies in the different expectations that private and public investors have. This problem is then worsen when these businesses are provided with 10 times the investment they usually receive. Long term investment in growing technology companies is easier when those companies don't have quarterly projections to hit and pressure from public investors to show consistent earnings growth.[85] Many unicorns which decided to access the public market, did face resistance because they were not considered to be ready. In order to overcome failing IPOs, Softbank has recently established a "IPO readiness" group. It believes that having its portfolio companies outsourcing their IPO preparations would be more efficient than an in-house group. This demonstrates that Softbank realized it is necessary to review the way and timing its invested companies are approaching public markets. Nevertheless, Masa already know that at least 15 of Softbank's portfolio companies will go bankrupt, as he stated in a Forbes' interview released on April 2019. What we can state, keeping in mind that we only analyzed three of the Vision Fund portfolio companies, is that the market is not prepared to finance money losing companies, even when they present massive growth rates and projections. This skepticism is probably influenced by the dot-com bubble burst of some decades ago. Many believe the same could happen with high tech unicorns, which sometimes seem to have unjustified billionaire valuations. What is sure is that every company analyzed in this dissertation has a great potential, and it may be the next Amazon in their industry. What is instead questioned here is that it may not be appropriate to introduce these businesses in the public market in a stage in which

[85] A. Sherman, "Masa Son's multi-generational vision is running into a brick wall: The public markets", *CNBC*

they do not have yet clear profitability path, retention rate, financial sustainability and a strong and consolidated business model. In the next future we can predict that the market will prefer some more stable and sustainable companies, rather than highly growing and disruptive unicorns. In this scenario Softbank will probably change its investment strategy or it will continue to fuel unicorns but with the perspective of maintaining these companies private, in order to follow only VC mindset, timing and rules.

## CONCLUSION

This dissertation is the result of an empirical research dedicated to the analysis of the venture capital ecosystem. It stems from a profound personal interest for what concerns VC's business model, investment strategy, valuation methods and the actors that are collaterally involved in this world. In this case the choice fell on high tech startups, being nowadays the major players receiving VC funding. The scope of this paper was to analyze the two actors involved in the high tech multi-millionaire deals which started to occur in the last decades and continue to hugely contribute to public markets' activity. The study of these arguments was concluded through the empirical analysis of the most important VC fund in the world, belonging to the Japanese giant Softbank, the Vision Fund. In particular, in order to grasp its unique investment strategy, the performance of some of its invested companies was revised. For what concerns high tech startups, their diffusion has been reviewed with a particular emphasis on their life cycle and financing process, challenges faced and their capital structure. In more detail, it emerged that their being innovative and disruptive, which it is what makes them so successful, represents at the same time what is preventing them to access traditional sources of capital, such as debt. This is confirmed by the peculiar capital structure that characterizes them: the so called Revised Pecking Order Theory, being equity financing their primary source of funding. For this reason they are a precious target for private investors, including venture capital funds. These latter are considered the main actors providing funds to high tech startups, enabling them to survive, expand and dominate markets and industries. As outlined trough the analysis of the literature, the role of VC is not limited to the economic contribution, but it is also respected for the added value their presence involves. With their operations they do not only alleviate the financing gap these businesses typically face, but they also provide hard competences, network and professionality filling the so called knowledge gap. Fulfilling these tasks, they ensure efficiency with the resolution of some market frictions, such as moral hazard and information asymmetries.

The complexity of VC's operations required the analysis of their articulated business model. In particular, the importance of the due diligence phase is enhanced, given its centrality in the determination of the investment success. As a matter of fact, the due diligence is the process intended to acquire knowledge about all the material facts regarding the company in which the VC intends to invest, in order to properly evaluate the risks it incurs, the company's points of strength and weakness which represent a great leverage for the negotiation phase. However, as confirmed by the empirical analysis of some Softbank's investments, in the process that leads VC firms to invest in a company a big role is also played by instincts. Indeed, it has emerged that the Vision Fund does not properly follow the typical VC business model. For instance, little weight was

assigned to quantitative criteria such as financial sustainability, profitability and business model consistency. Conversely, the gut component prevailed. As declared by Softbank's CEO, Masayoshi Son, he decided to invest in WeWork after a thirty minutes conversation with the company's CEO. This decision turned out to be too rushed: WeWork's CEO, Adam Neumann, demonstrated to be a source of problems with its behavior and attitude, which contributed to the company's last minute canceled IPO. Masa admitted committing a mistake of judgment: obviously he was so fascinated by WeWork's business idea and Neumann's personality that he overlooked some major points of weakness of the business, which at the end prevented the company from succeeding with the IPO. The IPO prospectus and the documentation attached showed some very optimistic hypothesis about the target market and the company business model. In particular, WeWork tried to sell itself like a software company (we can state it succeed in doing so, at least with private investors like Softbank, Morgan Stanley and J.P. Morgan). However, investors populating public market did not buy it: after a deep scrutiny of WeWork's documentation, they concluded it presents the typical features of a real estate business, along with its peculiar risks. Thus, the market did not confirm the $47 billion valuation, considered artificial, but it rather decreased the company's value to $8 billion. Similar findings came to light in the analysis of the Uber case which, conversely to WeWork, it is today a public company. The IPO was a success, being the biggest IPO after the 2014 Alibaba's debut on the market. It rallied $8.1 billion with a share price of $45 and a corresponding valuation of $74 billion. However, the stock had several ups and downs, with a low of $15 on March 2020, being today traded at $30. Also in this case, public investors did not limit themselves at looking terrific growth rates and financial projections, but they studied deeply IPO documentation, reaching the conclusion that the valuation was inflated. The hype around Uber going public was so high in the weeks immediately before, that the $8 billion floated in the market seemed not enough to speak about an outstanding performance. There were and there are some points of concerns on Uber business model, projections and competitive advantage. First of all, the analysis of 2019 annual report confirmed that, even if profitability would eventually been reached, it still has a great limit: drivers. As declared by Uber itself, profitability will come as a consequence of drivers incentives squeezing. This forces the company to face some difficult tradeoffs between the rights and interests of the different users involved. Even if we leave aside Uber's lack of profitability, there were others red flags which have not gone unnoticed, such as the cost of revenues. This term represents one of Uber's largest expense, considered to be very difficult to shrink in the foreseeable future. A second point of concern is the likely need of additional cash in the next future, if we consider the 75% increase in long term debt occurred from 2015 to 2019, touching $5.7 billion. The vertiginous rise led investors conclude that the money raised through the IPO will soon not be enough to cover long

term liabilities. Some partially different conclusions may be drawn for Slack. The company chose to enter the public market through a direct listing, rather than with a more traditional IPO. What Slack has in common with the other two companies is the lack of profitability. The percentage of loss over revenues is constantly increasing, being 38.5% for the year 2019. Investors' hesitation was then fostered by the strong competition faced by Slack from players like Google and Microsoft. Slack was not considered to have the financial strength required to beat competitors of such caliber. Consequently the belief of an overvaluation started to spread in the market, leading to the falling stock price and a delusional DPO performance. It was concluded that in the case of Slack there is an underlying problem regarding competitive advantage, apart from its financial forecasts. It is possible to notice a common denominator between the case studies analyzed in this dissertation. The biggest obstacle to Softbank's vision and investment strategy seems to actually be the public market. WeWork missed IPO and Uber and Slack failing entrances in the market are the proof that multimillion checks can not overcome every problem and/or convince investors joining Softbank's cause. All the companies cited are, or have been, at least unicorns if not *decacorns*. If it is true that 8 unicorns out of 10 are welcomed by the public market, it is as much true that investors are evaluating closer high tech startups and their business model. The fact that the valuations provided by VC funds for the companies analyzed were not confirmed by the public market is a sign that investors are still thinking by their logics, not completely trusting Silicon Valley rules and guts. We can only speculate on the reason behind this skepticism. Clearly, the global pandemic emergency has impacted many companies' business model, since it brought a new way of living, working and consuming goods. However, if we look for more rooted reasons we can presume that investors are more cautious due to the shock that the dot-com bubble burst have caused in last decades, constantly warning about what can happen in the markets in only 24 hours. Now as then, startups' multi-billion valuations have little to do with fundamental analysis. Traditional metrics addressing company's profitability and financial sustainability are not properly considered. Valuations are not reflecting the ability of companies and their business models to adapt to some exogenous factors such as changing economic conditions. Startups' valuations are rather considered to be inflated by VC presence and the ever increasing amount of funding provided. Softbank's has massively disrupted VC industry, with huge consequences on both startups and other private investors. With its multi-million rounds, it dictated new rules imposing a new concept of startup investment; the choice for the remaining VC firms boils down to follow Softbank or to exit from the scene. It has created a real *startup machine*, churning out unicorns (decacorns actually) at a very fast pace. Clearly, it creates benefits for startups it finances, which literally win the lottery, but it also entails some deeper consequences. For instance, the medial term of an IPO doubled in only fifteen years, going from 3.1 years in 2000 to 6 in 2015. This

demonstrates companies are valuing the benefits received from VC firms and private investors more valuable than what they could receive by public markets. The public company status is demanding: it requires transparency, financial sustainability and prudence. What instead being a private company assures is more flexibility, freedom and the possibility to bear some operational risks in conducting the business. Startups prefer to remain private for longer period of time, enjoying massive capital injections with the privilege of not worrying for operating losses and financial sustainability. Nevertheless, the cited market's reluctancy for loss making and billion-valued companies, together with the uncertain environment caused by the pandemic situation, may promote the rise of another type of businesses, called *camels*. This term refers to companies which have nothing to do with mythological creature. They typically develop in emerging markets, far away from the Silicon Valley's obsession of *finding, funding* and *building* the next unicorns. As they operate in less developed VC markets, they do not have much capital injections and ecosystem support, but they survive. For this reason they are called camels, because they can adapt to multiple climates, survive without *food* or *water* for months, and when the time is right, can sprint rapidly for sustained periods of time. These startups have a peculiar business model that prioritize sustainability and survival, with a strong balance between growth and cash flow. In particular, the growth differs from the one typical of unicorns because it is highly controlled. Camels invest in growth, accelerating revenues and cash spending, when there is a real opportunity to do it in a sustainable and convenient way. They achieve rapid growth, while committing also to different objectives like controlling costs. The scaling trajectory is not the one unicorns strive for, namely one characterized by an initial single profound valley of death, after which the growth is exponential. Camels are characterized by a more steady growth, with several points of discomfort which can be perfectly faced with a manageable growth strategy. What really differentiates camels from unicorns is that the first preserve the option to modulate growth and head back to a sustainable business if needed. If instead a unicorn fell into the large and unsurpassable valley of death, chances are it will never climb back again. Obviously the role played by VC firms with respect to camels is very different. Camels' business model allows them to raise appropriate amounts of money for specific purposes. In this way they can maintain more control over the business, ensuring themselves a bigger share of the pie in the exit moment. In conclusion, current market conditions and latest IPO performance make us expect a change in the VC industry. It is likely that VC firms will search for different types of businesses in the future, expanding their area of interest to the camels. These would be more accepted by public markets, which are loudly asking for sustainability and profitability as demonstrated by this study.

## SUMMARY

This dissertation aims to provide a general overview about the functioning of VC firms and their relationship with high tech startups, which today is embodied in multi-millionaire deals between these two parties. Venture Capital is commonly defined as a form of financing that investors provide to new ventures, mainly tech focused, characterized by long term growth potential in exchange for a minority equity stake. A widely accepted definition is not yet diffused, as it varies along with nations and their financial and economic systems. According to the Anglo-Saxon definition, VC is a form of private equity dedicated to newly established businesses, so it differs from private equity that instead intervenes in the steady and mature stage of companies. Nevertheless, they pursue the same goal: to increase the value of the companies they invest in in order to later sell them at a profit. Venture Capital's roots can be traced back in the 19$^{th}$ century. VC firms' role was particularly enhanced by the Silicon Valley phenomenon in the period between 1960 and 1980. Their financing solutions fueled the growth of semiconductor and computer companies, which started from the ground achieving astonishing economic performance and growth. As the dot com bubble burst in 2000, VC firms suffered major losses given their financial involvement in the companies going out of business. The years between 2003 and 2007 are defined as the golden age for private equity. However, the global economic crisis that immediately followed drained all the liquidity. Today VC industry is rising again with the record set in 2018 of $255 billion invested globally. It is necessary to make some considerations about VC funds' structure and organization in order to completely understand their business model. VC are financial intermediaries, so they manage other party's money investing in the so called portfolio companies. Subjects acting in the VC process are three: investors, venture capitalists and entrepreneurs. Therefore, venture capitalists serve both as supplier of capital to entrepreneurs and seeker of capital for investors. In U.S. and UK, VC firms are organized according Limited Partnership (LP) structure. Limited Partnership consists in a close-end fund, in which investors deploy money that are designated, for a predetermined period of time, to the investment decisions that the VC firm makes. The subjects involved in a LP are two: General Partners (GP), the venture capitalists and Limited Partners (LP), the investors providing the VC money to invest. The figure of LP is embodied by a variety of financial institutions such as pensions funds, foundations, insurance companies, high net-worth families and individuals. The wealth collected is then managed and invested by GP, which have a fiduciary responsibility to their LP. It is worth mentioning that the support provided by VC firms does not only concern financial aspects. They sit alongside entrepreneurs and assist them in managing risks. They are usually specialized in one or few industries so they have deep knowledge of the sector in which they are investing, and this allow them to also play mentoring roles. The VC firms' activity is commonly considered to be better explained by the Venture Capital Cycle, designed by Gompers and Lerner. They describe the role played by VC through a financial perspective, following their involvement in all the steps of their investment. It starts with the fundraising event, then it follows the proper investment phase and the monitoring activity, ending with the exit of the VC from the company. This approach is considered to be the most efficient in describing VC's activity because it is not affected by peculiar investor's or company's features, analyzing the VC phenomenon at a general level. Fundraising represents the first step of the VC cycle described by Gompers

and Lerner. It consists in the collection of money from the so called Limited Partners. The VC firms will firstly search for investors, using an investment proposal in order to explain some main aspects, such as the investment horizon, the vehicle used to invest the money, the type of investment, the target market and the returns for investors. All this information is enclosed in the so called information memorandum. The phase of fundraising is particularly important because it is in this step that fundamental decisions about investment strategy are taken. For instance, it is crucial to define the target companies. Usually some factors are considered in this step, such as: the country in which it operates, the target market, the availability of data and information about the company, the lifecycle stage in which the company is. Also the stage in which the VC firm will intervene is a critical decision to take: investors typically prefer to mandate VC firms that are specialized in a given stage financing (seed, start-up and expanding). Each lifecycle stage has its own peculiarities, therefore a VC firm with strong competences and specialization on a specific stage is considered to be the best option for both the company and investors. The preliminary stage of the fundraising process is concluded with submission to the investors' attention of a formalized proposal. As outlined by Gompers and Lerner, the fundraising strategy followed by VC firms varies whether the fund has a long and successful track of record. In case of a newly established VC fund, it probably will suffer from the lack of reputational benefits incurring in increased costs. The VC will be forced to build its network from ground zero in order to overcome the lack of track record and successful previous deals. The last step of the fundraising process is the arrangement of the subscription agreement. This document represents the investor application to join the limited partnership. The drafting of the agreement is intended to limit moral hazard and conflict of interests between the VC and investors. Right after the fundraising phase, the investment process begins. This phase is crucial in the determination of the VC's success. The investment process starts with the selection of the entrepreneurial projects, it then proceeds with the structure of the investment decision and it finishes with the implementation of the investment strategy. Every VC firm has its peculiarities and best practices in carrying out the investment process. However, it is possible to define some main steps considered to be common in every investment process: identification of the target company, assessment of the business profile, due diligence and structuring of the financing operation, price negotiation. The investment process is logically preceded by the screening of investment opportunities. In order to identify the best opportunity, a great number of companies should be evaluated. Once the scouting and the screening activities are over, the VC firm selects the entrepreneurial businesses considered to be more promising and consistent with the fund investment strategy, as well as with the economic and social environment in which it operates. During the screening activities the VC fund will apply some qualitative criteria in order to evaluate businesses, such as: geographic operations' area, the sector in which the business operates and the product/service provided by the same (thus, analyzing the underlying technology). After this first qualitative analysis, a great part of the businesses is rejected. The remaining ones are then analyzed extensively according to some other criteria, such as: target market and its trend; financial forecast; funding needed; management team. The documentation that the VC fund analyzes in this step is mainly represented by the business plan. This document deeply lays out the operational company profile, but it is usually long and not particularly easy to read. For this reason, it is generally send only to

investors that are seriously contemplating the idea of investing in the company. At the first approach with a VC firm, when the investor is only a potential one, startups usually present themselves with a pitch desk. This is a brief summary and presentation of your company and your business idea. It generally contains some key points, such as: the business idea, the product analysis in relation to the target market, the project's feasibility from a financial perspective and the amount needed to undertake the project. A key role in the selection of businesses to finance is played by the team and by the traction. Firstly, venture capitalists want to invest in businesses represented by a team composed by highly educated people, which present complementary competences and skills. The other factor highly valuated by VC funds is the traction: it can be intended as the validation of a business idea. Validation in this case means proof of the project's feasibility and could be represented by the adoption of the product/service by the market. When the target company has been selected the due diligence process is initiated. This phase is perhaps the most critical one in the whole investment process. It is intended to acquire knowledge about all the company's material facts from a financial, accounting, fiscal and legal perspective. The goal is to proceed with the investment with an in-depth knowledge of the business. The due diligence process is not limited to the business plan's verification but it is a more comprehensive process. The venture capital firm needs to acquire knowledge on the points of strength and weakness of the target company in order to properly determine the price and during the negotiation process. The due diligence process concerns various business' aspects, thus it is possible to define different types of due diligence: financial, legal, fiscal, commercial, environmental, operational and HR due diligence. It is crucial to highlight that also an analysis of the entrepreneur profile is performed. The VC needs to assess the managerial competencies of the team, in order to fill the knowledge gap that inevitably exists. The last stage of the investment process is embodied in the price definition and the negotiation of terms and conditions. During this step the investor attempts to relate the present and prospect value of the business, in order to determine a fair price. The theory about business valuation mentions different way in which it can be carried out. However, it always depends on the goals that the valuation has. For a VC firm, the valuation of a business is aimed at the definition of a possible exit price that will assure a specific IRR. The most used valuation method in the Venture Capital industry are: multiple method, discounted cash flow method and venture capital method.

VC firms invest in new ventures with a clear objective in mind: to monetize their investment in five to ten years in order to compensate limited partners for their contribution to the fund. They try to reach the highest financial return possible in the shortest period of time. How they achieve this return? Through multiple *exit strategies*. With this term we refer to the various methodologies applied by VC to create a *liquidity event,* which can be done through different methods. The first, and most common one, is the trade sale, also known as M&A: the acquisition of the startup by a bigger company. In most of the cases the buyer can be defined as a strategic one, like a company operating in the same industry of the venture. For this reason, trade sale is the most convenient exit method for the VC in economic terms. Indeed, in this case the bargaining power is on the VC side. In addition, this strategy benefits also the company being sold since it implies the acquisition of 100% of the company and it is less time and money consuming than other exit strategies, such as the IPO. The second exit strategy analyzed is the so called secondary buyout, that involves the VC

selling its participation to one of its competitors. This transaction is particularly performed in cases of deleveraging or refinancing. Moreover, it is not unusual for a VC to exit through an IPO. The IPO process refers to all the activities performed by the company to become public, starting floating in the stock market. This exit strategy is adopted mainly by startups in the mature stage, with a strong and stable customer base and strategy. It is without doubt the method that most benefit the VC: through the IPO the company and its investors, gain a lot of publicity and enhance their reputation. It is worth mentioning that every business has its own life cycle that influences the right time for a VC to exit. Usually, a VC fund starts to consider the exit whenever the value of their initial investment is substantially above a certain predetermined threshold, that allows them to fairly compensate LP.

In this dissertation, a specific counterpart of VC deals is considered: high tech startups. The chose fallen on this type of ventures given the economic importance of the deals they conclude with VC. The sectors involved in the high tech industry are characterized by companies whom core business is to produce and/or distribute advanced-technologically based products or services. At the very beginning of high technology era, the industry was anchored to semiconductors. Then in the '80s the ultimate identified high technology sector was the computer and software one and in the '90s the internet world dominated the scene. Today the concept of high tech embodies a much wider category of industries and sectors; last decades seen the rise of disruptive technologies which totally revolutionized our way of living, such as artificial intelligence, robots, healthcare, sharing economy-based businesses and cloud-based computing, all being today included in the high tech category. The high tech industry has recorded ridiculous economic results since the 1990. The first involvement of VC funds with high tech startups date back to the explosion of the dot-com industry specifically in the Silicon Valley area. This area can be considered a high tech startups cluster, with the presence of the world's largest high tech corporation and thousands of startups. Today Silicon Valley counts for more than one third of all the capitals depleted in the United States. Some of the most powerful VC firms have their headquarters in this area, such as Sequoia Capital, Kleiner Perkins Caufield and Byers. All the high tech companies analyzed in this study may be defined as unicorns. The term, firstly used in 2013, refers to privately owned late stage tech startup valued at least $1 billion. The number of unicorns has constantly increased over the years, reaching in June 2020 the worldwide figure of 600 with the entrance of 44 new companies only in the first six months of this year. The list includes well-known companies such as Stripe, Airbnb, SpaceX, Revolut, Klarna and Didi Chuxing. These unicorns are collectively valued $2 trillion, with a 25% increase in value compared to 2019. Unicorns are geographically distributed mainly among US and China, but also Europe is starting to present some of them. Clearly, this geographic distribution is not by chance: it reflects the activity of VC market in different continents. The skyrocket valuation assigned to these high tech startups is quite controversial, since most of the times it does not reflect a real financial performance of the company, but it is rather the result of VC and investors valuation. These valuations are based on growth expectations, financial and customer base projections but they do not consider any fundamentals. What could surprise the most is that often unicorns do not even present revenues yet; still they are valued billions. High tech startups are innovation intensive companies. Precisely such innovative component, which is their greater competitive advantage, may prevent them to easily access

external capital. For the entrepreneur to transform the innovative component into something that can be sold and make profits, some factors have to be considered like R&D. The development of a typical high tech venture's product is preceded by a relatively long period of research activity, during which financial resources are necessary to compensate people working, to buy software and technological infrastructures. Consequently, they are capital demanding companies since the very first step of their life. However, obtaining external funding is one of the biggest challenge faced by high tech startups for several reasons. First of all, the innovative component of their solutions is not easily understood by everybody. This phenomenon is referred in literature as the *opacity of information*. Even when disclosed, information about the functioning of their products may be not clear and apprehensible. Moreover, high tech startups encounter constraints in disclosing sensitive information about their projects, since their chance to succeed is almost completely embodied in those details. This circumstance prevents them from receiving money from the public markets; while the lack of records about their financial solidity and their inability to offer collaterals prevent them from receiving investments from the debt side, such as from banks, incurring in the so called *innovation debt penalty*. Finally, exactly because of the innovative component, high tech startups' projects usually are implemented in a context of multidimensional uncertainty, which makes difficult to predict their outcome. All the factors mentioned so far represent a real threat for the survival of innovative companies, which are at the same time capital constrained and capital demanding. Usually high tech startups' founders adopt the so called *bootstrapping financing* solution in the early stages of their projects, exploiting all the personal resources and asking to friends and family to do the same. However, when these resources are not enough anymore, there is a huge possibility for the company to suffer of a premature death. The lack of external capital, the so called *financing gap*, damages companies that would potentially be beneficial for the society as a whole. One can conclude that the financing gap is caused by adverse selection and moral hazard, created by market imperfections. These market frictions are the conditions justifying the existence and operations of some intermediaries, such as Venture Capital firms. They fill the funding gap faced by high tech startups by investing in those companies considered too risky and untrustworthy. In a sense, the role played by VC enhances the efficient allocation of resources. The other challenge faced by high tech startups is the *knowledge gap*. The founders and their teams are in general highly skilled in technical fields. However, they lack management competences in all its aspects. They usually do not have experience in resource allocation, accounting and financial, human resources and marketing, just to mention some. The alleviation of the knowledge gap is one way in which VC firms add value to the firms, besides the provision of capital. Their experience and know how allow them to perform mentoring and advising activities. VC are no silent partners; they proactively contribute to the day to day management of the company, ensuring a close collaboration and the alignment of their interests with the ones of the management team. The challenges faced by high tech new ventures in accessing debt, force them to divert from the capital hierarchy defined by traditional Pecking Order Theory (POT) and to prefer equity financing, provided by VC firms, as primary source of capital instead of debt. For this reason, the literature has developed the so called Revised Pecking Order Theory for high tech startups. Indeed, as suggested by Sau, POT can be inverted to the extent that VC firms, which represent equity financing,

perform an evaluation function that reduces the information asymmetry, after which innovative firms can turn to bank credit. There is a research paper, drafted by Fourati and Affes, that confirms the existence of a reversed POT for high tech new ventures. These findings are consistent with the study carried out by Minola and Giorgino. Through an empirical analysis of UK NTBF's financing they reach the conclusion according to which younger, smaller and R&D heavily engaged firms are less likely to apply for bank credit, preferring equity over debt.

The already mentioned incremental value provided by VC firms is the engine new ventures need to survive and evolve. The significance of the added value can be explained through the resolution of some market inefficiencies as well as through the coaching activity performed and the certification effect provided. We can attribute the existence of VC firms to market imperfections. Indeed, modern economic theory has highlighted frictions in capital market which make it difficult, if not impossible, for some companies to easily obtain external funding and consequently grow. In particular, adverse selection and moral hazard are the most frequently cited among market imperfections. Startups are the companies most likely to suffer from these market imperfections, due to the already mentioned *opacity* that distinguishes the innovative component of their products. This especially applies for banks, which are considered unable to evaluate *ex-ante* the quality of the project proposed by high-tech firms that lack a track of record. The above arguments are considered to be alleviated in VC-backed firms, especially startups. Indeed, due to their sectoral specialization VC develop screening capabilities which allow them to properly judge the hidden value of the proposed projects, avoiding the adverse selection problem. The screening process performed by VC is a meticulous and exhaustive process, which demands a lot of efforts. The completion of this activity somehow benefits companies through the reception of highly valuable information about how investors expect them to grow in order to become a feasible target. Returning to moral hazard issue, it is addressed by specific contractual clauses and methodologies adopted by VC in the releasing of additional funding: the so-called *stage financing*. VC are used to finance their portfolio companies according to predetermined stages, called rounds. This method is implemented to protect their investments from opportunistic behavior of entrepreneurs, creating high powered incentives to achieve milestones previously set. VC also perform coaching functions as highlighted by many. The already mentioned knowledge gap that high tech startups faced is alleviated by VC presence. One example is the "*managerial professionalization*" documented by Hellmann. VC seating on Board of Directors allow them to introduce some practices such as the recruitment of external managers, the adoption of stock option plans. The implementation of proper system of corporate governance, usually suggested by VC, makes venture capitalist-backed firms attractive target also for other investors. Moreover, young businesses take advantage of the wide network VC firms generally are into. Is not unusual for the company to firstly deal with customers coming from the VC network of contacts. Linked to this argument is the last benefit provided by VC when investing in a company: the *certification effect*. The venture capitalist endorsement is perceived by the market as a signal of soundness and quality of the business and the people in charge. This enables the invested company to gain credibility with other investors also in the perspective of a future IPO. The theoretical analysis carried out so far, would be uncomplete if not corroborated by some empirical evidence. For this reason, the last part of this study is dedicated to a

general overview of the most important VC firm in the world, the Vision Fund, together with the effect that its operating has on the VC industry. In order to critically analyze Softbank's business model and investment strategy, the empirical analysis of three of its invested companies is carried out. These were specifically selected because we believe they embody some points of weakness of the Vision Fund's strategy. The choice of analyze the Softbank case study, moves from a simple matter of fact: the Vision Fund is the biggest VC firm investing in high-tech startups ever. The fund has been active since 2017 and it has already invested in more than 70 companies. The investment strategy adopted is quite unique and it is also criticized by the most. Nevertheless, it is undeniable that this strategy has brought some big returns to Softbank, like the one earned with the investment in Alibaba. Therefore, it is worth to be analyzed in order to capture its points of strength and weakness. Softbank Group Corp. is today one the biggest public company in the world, more precisely at the 36$^{th}$ place, as reported in 2017 by Forbes. It was founded in 1981 by the eclectic character of Masayoshi Son. He started to invest in what he considered to be the companies of the future, such as Yahoo and Alibaba. In particular, the $20 million invested in the 2000 in Alibaba were one of its most profitable investment: when the company went public in 2014 for $60B Softbank earned a return of 300.000%. Masa decided to invest in Alibaba when Jack Ma, the founder, did not have any business plan, zero revenues and only 35 employees. The same Masayoshi stated many times that his decision to invest in Alibaba was an intuition. Precisely this *gut-driven* way of deciding in which company to invest, it is what makes Masayoshi the character he is. He is profoundly convinced that the Artificial Intelligence is the largest revolution in human history and he follows this belief in defining its investment strategy. He has a big goal in mind, that is to contribute to people's happiness through AI. To this end he funded Vision Fund. It has $100 billion provided by Masayoshi but also by some giants like Apple, Qualcomm, Sharp and by two sovereign wealth funds that contributed nearly half of the fund, Saudi Arabia's Public Investment Fund and Abu Dhabi's Mubadala Investment Company. This fund has invested in 76 companies so far and its smallest bet amounts to $100 million. The investment made are real bets, since the strategy followed by Masa is more a "work of art". He does not follow any specific and fixed strategy, he rather prefers to bet huge amount of money on companies he considers to be disruptive. Many consider the same Softbank as a disruptive phenomenon. He completely revolutionized the way of investing, starting from the strategy applied to the amount invested. VC firms generally tend to invest moderately and in more companies. Softbank instead invests hugely and in fewer companies. As reported by many sources and verified by this dissertation, Masa's big checks have helped inflate many pre-IPO companies' valuations, making other VC to either write bigger checks or drop out the deal entirely. This is why Softbank is considered to have disrupted the VC industry: it reshaped the way of doing investment in late stage startups, with its "winners take all" strategy. Until recent times, even if the investment strategy of Softbank was not completely grasped by the market, everybody could agree about the greatness of its financial results. Nevertheless, WeWork missed IPO and Uber performance casted doubts about the efficiency of the same. Therefore, an empirical analysis of some of Softbank's portfolio companies performance is carried out, aimed at the deduction of the main characteristics of Softbank investment strategy. The sample of companies analyzed is composed by: WeWork, Uber and Slack.

It could be convenient to start the analysis from WeWork, recently involved in a lot of rumors and news. The coworking space company, funded in 2010, has its headquarters in New York City. It had a stunning growth during its path, starting from a single spot in NY to 528 locations displaced in 111 cities. It was born as working spaces provider for young entrepreneurs and startups, but it matured along the way. Its valuation has grown commensurately over the years: in 2014 it was valued $1.5 billion and it quickly attracted a lot of investments. In December 2014 important names such as Goldman Sachs and JP Morgan participated in its series D financing round providing $355 million, along with the $5 billion valuation. Softbank firstly invested in WeWork in 2017 after a 30 minutes conversation with its CEO Adam Neumann, in which he convinced Masa to invest over the years $10.65 billion. It was the additional $2 billion provided by Softbank in January 2019 that secured WeWork a $47 billion valuation, winning the title of tech world's most highly valued startup. From this brief introduction it is difficult to imagine that just few months later the valuation of this promising company decreased to $8 billion and that its CEO was forced to step down. In order to understand what really happened, a crucial fact must be clarified: the downfall began with the WeWork's IPO filing. On August 14th WeWork officially filed its IPO paperwork. There was a lot of hype around the insight embedded in this document, the same was exposed to a detailed scrutiny by investors, financial institutions and media. And it was in that very moment that the already existing doubts about WeWork profitability became a certainty. After only 6 weeks the IPO was called off, Neumann stepped down as CEO and the valuation of the company had fallen more than one half. There were three main matters of concerns that could have been a wake-up call if only considered: the huge losses of the company, its business model and the corporate governance. The company was reporting losses since very long time from $400 million in 2016 to $1.9 billion in 2018 and $700 million only in the first half of 2019. Clearly the profitability of the company was questioned by many, especially after the warning contained in the prospectus for the IPO, where the parent company We Co admitted to have a history of losses and it expressed concerns about their ability to achieve profitability in the foreseeable future. This statement only confirmed what investor were already skeptic about: WeWork was not even close to be profitable and this circumstance, even if supported by great growth projections, was not appropriate for a $47 billion valuation. The next natural question everybody could ask is: where this valuation came from? The company's valuation evolution, went from $97 million during its Series A round in 2009 to $47 billion after the funding round G-1 just ten years after. In 2018 the company was valued at $20 billion soon after the first investment of $4.4 billion made by the Vision Fund. But the real increase in valuation happened after the Softbank's investment in the period between 2018 and 2019, that was around $5 billion. In that occasion WeWork valuation went from $20 billion to $47 billion, a tremendous increase. For this reason many investors believe that the valuation was inflated by Softbank. In order to find the last "real" valuation of WeWork you have to look back to 2016, when the company was valued $16.9 billion, after the Series F round. This could explain why, immediately after the disclosure of its projections and assumptions, the valuation of WeWork went from $47 billion to $8 billion. The previous valuations were not determined by financial results or company's operations, but they were rather the result of the market hype concerning Softbank's presence among investors. The same Masayoshi defined some weeks ago his investment in WeWork as a

"mistake". He justified the investment saying to Forbes that "*You get excited with an entrepreneur who seems great but does not necessarily deliver a great return*. *We paid too much valuation for WeWork, and we did too much believe in the entrepreneur*". The CEO character and personality is another concerning point, strictly related to the corporate governance. Neumann, the CEO of WeWork, has always been known to be undisciplined. For this reason Masa's recent statement about his mistake in investing in WeWork has very much to do with the misjudgment of Neumann character. The two of them were particularly close, and probably the mutual respect obfuscated negative aspects of Neumann. However, this should never happen in VC deals. For this reason many believe that the 30 minutes due diligence conducted on Neumann by the Vision Fund before investing in WeWork was not enough. Another WeWork's point of weakness is its business model. The first who revealed the business model and the pitch deck used by WeWork to convince investors was BuzzFeed in 2015. In these documents anyone can clearly notice the extremely optimistic assumptions on which the business model was based. Just to make an example, WeWork estimated its potential market to be about $3 trillion. What probably not everybody noticed at that time is that this assumption considered as a potential "member" anyone who worked at a desk in an American city where there was a WeWork. In non-US cities with WeWork building, the estimate applied to anyone with an office job. Clearly, these are very optimistic but also unrealistic assumptions. Probably what WeWork used to justify these projections was the fact that they pictured the company as a revolutionary high tech startup in the real estate industry. This method, together with a great storytelling, enabled Neumann to lock down massive rounds and earn what is essentially a real estate company the privilege of being discussed as — and valued like — a Silicon Valley software startup. However, its business model has nothing to do with software, it has instead real estate written all over. WeWork does not own real estate, but instead takes long-term leases and then rents it out for the short term. However, what Softbank should have valued is that this business model is what is usually called "asset heavy, platform light". This means that it is based on arbitrage opportunity between long term leases and short term renting. Nevertheless, this is considered a huge risk: whenever the economy suffers for a down, the demand for renting goes down too, but WeWork must continue to pay long term leases, even in the absence of rent demand. In addition WeWork is not a platform, even if the company liked to sell its business like one citing more than 170 times this term in the IPO prospectus. What probably Softbank and WeWork's other investors should have considered is the scalability of the business, that would have been guaranteed in the case of a platform based business model. In that scenario WeWork's business model could have been defined as asset light, platform heavy. Instead of leasing spaces from real estate owners, WeWork could focus on facilitating the match between demand and supply. In this way its operating would be closer to Airbnb or Oyo, two of the most valued platform in the market. However, WeWork is to all intents and purposes a real estate company and it also presents its typical issues exposed by the company itself in the S-1 file. These risks are: the city concentration risks, lease negotiations which start to be uncommon in the countries WeWork is expanding, the cost of renewing the buildings it leases. Summing up, we can only speculate on the reasons behind Softbank investment decision and make the following thoughts. First of all, Masa closeness to Neumann did not allow him to objectively judge his character and the business. The investment in WeWork was highly discouraged by

the then Softbank's president Arora. He deeply scrutinized WeWork business model in 2016 and came to the conclusion that the company's valuation of $8 billion was unrealistic. Nevertheless, Masa decided to pursue being completely compelled by Neumann character, the business idea and growth projections. All these factors certainly played a role in the valuation of WeWork, but basically what really Softbank and the other investors did not grasp is that WeWork is not a tech startup. It may be presented like one, but in reality its business model belongs to a real estate company. Probably, the Silicon Valley fever and Masa's 300-years plan pushed him to always search for the next Alibaba. WeWork has been proven not to be ready for a public market debut but Masa is fiercely defending its opinion, as he recently stated its belief about WeWork huge success in the next future.

Unlike WeWork, Uber "successfully" completed the IPO process on the New York Stock Exchange and it is today a public company. Nevertheless, its performance just after the IPO did not satisfy the public market, with important consequences on Uber's stock price and valuation. Uber was funded in 2009 and it soon became the highest valued private company in the world, thanks to its fast growth track record. The ridesharing company transformed an entire industry by using technology to enable individuals to provide transportation for others using their own vehicles. Uber went public the 9$^{th}$ of May 2019. The price range set for the IPO was initially between $48 and $55 per share, with a corresponding valuation of $120 billion. However, the Lyft's disappointing debut on the public market occurred just two months before affected Uber's expectations. Thus, initial IPO price was set to $45 per share with an offering of 180 millions of shares. The IPO raked $8.1 billion bringing Uber's valuation to $75 billion. Uber performed the biggest IPO since the one of Alibaba in 2014 positioning itself at the third place in term of biggest IPO ever among tech companies. However, the post IPO performance has been really frustrating, touching a peak of $47 per share in May 2019 and reaching $15 to its lowest on March 2020. The share is today traded at $30 (July 2020). The bad performance presented in the last month was surely affected by the COVID-19 situation, which hugely impacted on Uber. Nevertheless, the company unprofitable path was reiterating since the beginning of its history and this did not seem to scare investors. The company reported losses for $3 billion in 2018 and they increased to $8.5 billion in 2019. Silicon Valley actors are used to invest in loss making companies, because they know that it may take years before their disruptive changes are understood. Indeed, even before the IPO Uber was considered to be about to join an ugly but exclusive club: "unprofitable companies worth more than $50 billion". Then why the IPO was a failure? The market, populated by risk adverse investors did not grasp the yet "work in progress" business model of Uber. A situation that highly resembles the one faced by WeWork, who was stopped just before the debut on the public market. The IPO was somehow inflated by the hype created around one of the most expected IPO. Everybody knew Uber was reporting huge losses, but being privately held it was evaluated by VC funds for about $70 billion. Thus, its financials disclosed just before the IPO, were deeply scrutinized by investors. What they saw was a complicated situation, with great growth projections but the path to profitability was not clear. The definition of Uber's business model was still ongoing, as nowadays after all. If this did not represent a problem for VC fund in the evaluation of the company, it surely scared investors. As stated above, there is a sort of sentiment in the market about a "Silicon Valley's bubble", ready to burst. In addition, the

company's financials had three main red flags that scared the market. The cost of revenue: in the income statement the cost associated with booking fees are called cost of revenue. This indicator, represents one of Uber's largest expenses and it may be difficult for the company to reduce it, since contractors may require higher fees and the number of drivers will likely increase in order to fuel the growth. Long term debt: it went from $1.423 billion in 2015 to $5.707 billion in 2019, in only five years with an increase of 75%. The fear of many investors is that, even with the $8 billion raised during the IPO, Uber will need additional cash soon in order to cover for these long term obligations. No profit in sight: it is just wrong to assume that investors would buy Uber's share only because it is a tech company, participated by some of the most important VC funds in the world. Investors which scrutinized Uber's financials just before the IPO, did not even see a clear path to profitability and this represented a great limit to invest. Then, it is necessary to consider some of the assumption Uber made to convince investors to believe in their business model. Investors did not consider them feasible and this affected the performance of the IPO. First of all, they estimated a total addressable market of 12 trillion including personal mobility, food delivery and freight shipping. This data is however very difficult to validate. If this amount of TAM would be achievable, you would expect Uber's revenue YoY growth rate to be characterized by a constant increasing. Nevertheless, Uber's revenue YoY growth has been always declining from 50% in 2015 to 20% in 2019. One of the main reason is that as Uber continues to protect and expand its market share it is forced of giving up a larger share of revenues to drivers and restaurants. This is demonstrated by the misalignment between Gross Booking and Core platform adjusted net revenue. The first one indicates the total amount of money spent by users on the Uber platform while the second one is a revenue measures that subtracts drivers or restaurants pay and incentive from gross booking. In the fourth quarter of 2018 Gross Booking increased by 11% but Core platform adjusted net revenue declined by 1%. Another important limit to Uber's profitability are drivers: unless the company squeezes drivers incentives they can not increase market share and thus profitability, as stated by the same in its 2019 annual report. Uber states to be forced to make some tradeoffs between the rights and interests of the different users involved in the use of their platform. Indeed, higher the number of drivers using the mobile app, wider the choice offered to consumers and higher revenues. A second point of weakness is Uber's competitive advantage. According to the company its competitive advantage stems from the so called network effects. In the S-1 file they disclose their strategy: to create the largest network in each market so that they can have the greatest liquidity network effect. Uber believes that if it is able to increase the user base, then it will benefit from network effect that will ensure long term competitive advantage. As it is clear, riders want to use a platform with lots of drivers, which minimizes wait times and drivers want to use a platform with lots of riders so they have consistent fares. However, media highlighted that it has little sense to talk about network effect in ride-hailing industry because: the switching cost a driver or a rider incurred are very low. Indeed, it is easy for both the players to use multiple ridesharing app. This is demonstrated by the fact that 70% of Uber's drivers also work for Lyft. Moreover, scale effects are low too. The 23% of Gross booking in 2019 were generated in 5 main metropolitan areas. This means that if Uber is not able in the next future to increase this percentage or to penetrate other cities, the network effect will not make a difference in Uber's profitability. The ones just

mentioned are the main points of concern identified by the market and investors in Uber's business model and financials, which prevented the company from a great IPO performance. However, it is necessary to say that the IPO was not a disaster: Uber raised a considerable amount of money which seemed to be few if compared with the pre-IPO valuation of the company. Again this is due to the overvaluation provided by VC funds and private investor. As mentioned many times now, the valuation of private actors consider such different things from what the public market look for that a unicorn may not perform at its best on public markets.

Differently from the two previous companies Slack, one of the most used workplace messaging service, chose to enter into the public market in June 2019 with a direct listing (DPO) rather than with a traditional IPO. Following Spotify's experience, the company decided not to collaborate with investment banking for its entrance in the market. Slack was founded by Stewart Butterfield, the co-founder of Flickr, in 2013. In the first week it reached 120.00 daily active users with a corresponding valuation of $1.2 billion in late 2014. These figures made Slack the fastest growth startup ever. Softbank invested in the company an amount near to $355 million between 2017 and 2018 when it valued $5 billion. At the moment of the DPO the company was valued around $7 billion and it had set a reference price of $26 per share for the DPO. However, it started trading at $38.50 and closed at $38.62 valuing the company at $24 billion. The first impressions on the Slack direct listing were positive since it surged 48.5% on the NYSE. The company presented itself with $400.55 million of revenue and a loss of $138.9 million for the year ended January 31 2019. It had raised $427 million in 2018 during its latest financial round. However, Slack's stock has rapidly lost altitude reaching a low on the first January of 2020 with a price of $21. As for Uber and WeWork the concerns expressed by the market and investors regard the uncertain profitability, but in this case other two factors played an important role in determining the stock performance: the competition faced and a SaaS repricing. Starting from what Slack performance has in common with other two companies analyzed, it is no secret that the company reported losses since the beginning of its business. Even though, its revenues are constantly increasing. For the fiscal year of 2020, ended in March, the company reported $181.9 million with an increase of 49% YoY. GAAP operating losses were $588.3 million corresponding to 93.3% of revenues compared to $154.2 million loss in fiscal year 2019 or 38.5% of total revenues. The percentage of loss over revenues is still increasing, casting further doubts. The same management team expressed concerns about this aspect. The doubts about profitability were fostered by the strong competition faced from Slack by players like Google and Microsoft. Differently from the other two cases analyzed, investors' valued that, despite Slack was beating expectations on earnings and revenues, the company does not have the ability and financial strength to overcome competition. The other element is the repricing at which SaaS companies were exposed. These companies are commonly valued on revenue multiple, differently from the traditional P/E approach followed for other businesses. The reason lies in the fact that for SaaS companies, current earnings are not good indicators of future cash flows because customer acquisition costs are typically upfront expenses and most of these companies are still in an aggressive growth stage. In the months immediate following the Slack's DPO, SaaS companies were repriced by the market, from a 11x enterprise value/ revenue to a 10x. This slight change in pricing, can partially explain the stock performance

just after the DPO. In conclusion, what we can say about Slack's DPO performance is mainly attributable to two factors: the unclear path to profitability and the strong competition faced. Again, these issues were not a point of concern for VC firms which have invested in the company. However, they represented a strong limit according to the market. Essentially, investors adopted for Slack the same judgment of Uber and WeWork: the promise of great profitability, even if backed by great revenue growth rate, is not enough.

The analysis of the previous three companies conducted so far, has highlighted the Vision Fund's investment behavior and business model. The VC fund, with its 300-years plan, has invested mainly in asset light businesses, platform software driven with increasing amount of data processed. The main goal of the fund is to invest in companies which will disrupt their original industry. In order to do it, the checks it writes are way bigger than other VC firms. This assure Softbank to fuel the growth of the invested companies. The massive growth rates registered by these businesses, is what leads Softbank's CEO to believe these companies will revolutionize the world and our way of living. However, critiques to this massive cash injections have naturally emerged. First of all, the big bets made by Softbank are believed to have inflated the whole VC market. Masa's investments have helped inflate many pre-IPO companies' valuations, making other VC to either write bigger checks or drop out the deal entirely. This phenomenon, if protracted in the long run, could lead to a "tech bubble", similarly to what happened with the dot com companies. If it is true that many winners, like Amazon, did report huge losses on their financial statements for many years in a row, it is also true that they had a clear business model, ready to be adapted to the ups and downs of the economy. What investors claim to be missing in Softbank's invested companies, is a clear profitability path showing the company will eventually turn to profit. But what scares the most is the business model behind these companies, considered to be too exposed at exogenous phenomenon and too often not well defined. For instance, many argued that WeWork should not be considered as high tech, but rather as real estate. In turn, also the risks at which the company is exposed should be the ones belonging to the real estate industry. Softbank has the presumption of treating every invested company like a software one, even when their core business has nothing to do with software. In addition, Vision Fund presence among startups investors have influenced founders' behavior. Softbank typically encourages founders to think bigger, act crazier and annihilate their competitors. In some cases, the Vision Fund invested in direct rivals , Uber and DoorDash for example, leading both companies to aggressively burn cash to keep up with the other on customer acquisition, market expansion and recruiting top talent. It encouraged entrepreneur to take risky decisions which often ended badly. The judgment of the Vision Fund around the management of the invested companies is also criticized. As stated by the same Masa, he often "fall in love" with entrepreneurs' way of thinking and how they can visualize their product in the future market. For this reason, he often decides to invest without a proper scrutiny over leadership ability and governance. This can lead to big problems, as demonstrated by the WeWork case, in which Softbank has been forced to make the CEO step down because of its inadequate behavior. Nevertheless, Softbank declines all the critiques moved to its strategy stating that is not easy for the rest of the world to understand their 300-years plan. In their long term perspective they define themselves as patient investor. They also do not deny any of the

bets they made: Masa admitted they committed a mistake with WeWork, especially in the valuation of the CEO's character, but they continue to be convinced that the company will be a success one day.

Despite the critiques moved to Softbank's strategy, what we can conclude is that the Vision Fund does not invest meticulously following the VC typical business model. We have highlighted the steps according to which funds decide whether to invest in a new venture, particularly enhancing the due diligence centrality. The disappointing performance registered by WeWork, Slack and Uber is the proof that the due diligence was probably not carried out correctly. We may speculate that the qualitative as well as quantitative criteria a VC fund should follow in its investment decisions were not properly weighted. Little weight was assigned to financial sustainability, profitability and business model consistency. Conversely, the Vision Fund have favored the gut component that inevitably characterizes every investment decision, letting personal relationships, emotions and excitement interfere in the deal. These in turn have influenced the valuation of these companies, leading to apparently unjustified billionaire deals. Moreover, the IPO performance of the cited companies reveals that the biggest obstacle to the success of the Vision Fund are public markets. Long term ambitions of the investment fund are colliding with short term expectation of the market, creating obstacles to the companies' performance. It is not uncommon for the companies participated by Venture Capital firms, to have high pre-IPO valuation which then resulted in big fiascos once entered the market. The problem lies in the different expectations that private and public investors have. This problem is then worsen when these businesses are provided with 10 times the investment they usually receive. Long term investment in growing technology companies is easier when those companies don't have quarterly projections to hit and pressure from public investors to show consistent earnings growth. Many unicorns which decided to access the public market, did face resistance because they were not considered to be ready. In order to overcome failing IPOs, Softbank has recently established a "IPO readiness" group, since it believes that having its portfolio companies outsourcing their IPO preparations would be more efficient. This demonstrates that Softbank realized it is necessary to review the way and timing its invested companies are approaching public markets. Nevertheless, Masa already know that at least 15 of Softbank's portfolio companies will go bankrupt, as he stated in a Forbes' interview released on April 2019. What we can conclude, after the analysis of just three of the Softbank invested companies, is that the market is not prepared to finance money losing companies, even when these present massive growth rates and projections. This skepticism is probably influenced by the dot-com bubble burst some decades ago. Many believe the same could happen with high tech unicorns, which sometimes seem to have unjustified billionaire valuations. What is sure is that every company analyzed in this dissertation has a great potential, and it may be the next Amazon in their industry. What is instead questioned here is that it may not be appropriate to introduce these businesses in the public market in a stage in which they do not have yet clear profitability path, retention rate, financial sustainability and a strong and consolidated business model. In the next future we can predict that the market will prefer some more stable and sustainable companies like the ones defined *camels*, rather than highly growing and disruptive unicorns. In this scenario Softbank will probably change its investment strategy or it will continue to fuel unicorns but with the perspective of maintaining these companies private, in order to follow only VC mindset, timing and rules. WeWork

missed IPO, Uber and Slack failing entrances in the market is the proof that multimillion checks can not overcome every problem or convince investors joining Softbank's cause. If it is true that 8 unicorns out of 10 are welcomed by the public market, it is as much true that investors are closer evaluating high tech startups and their business model. Moreover, the fact that the valuations provided by VC funds for the companies analyzed were not confirmed by public markets is a sign that investors are still thinking on their way, not completely trusting Silicon Valley rules and guts.

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