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**"CORPORATE VENTURE CAPITAL, INNOVATION AND VALUE  
CREATION: INSIGHTS FROM A MULTIPLE CASE STUDY"**

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# INTRODUCTION

The purpose of this study is to analyse the phenomenon of Corporate Venture Capital (CVC) and the value creation that can derive from its implementation, with particular reference to the Italian context. To accomplish this goal, an initial analysis of the literature on CVC and value creation is accompanied by a multiple case study of Italian CVC programs. This case study will be useful for outlining trends, similarities, and differences that may provide ideas and indications for further and more extensive research.

CVC is a form of venture capital investment in which a medium/large corporation invests in a target company (usually a startup or a highly innovative small company) obtaining a minority share. Unlike independent venture capitalists, who invest in high-risk and potentially high-reward start-up companies with a well-defined exit strategy with the ultimate goal of earning a high IRR to provide a capital gain for general and limited investors, the primary purpose of CVC is both financial and strategic. The financial side is still important, and a financial return is expected and sought; however, sometimes short-term financial returns may be sacrificed if the CVC's investment is considered strategically solid enough to permit higher long-term value creation. The strategic benefits of the CVC are usually linked to innovation. It is usual for CVCs to invest in innovative startups that can help in the business of a parent company by widening the range of technologies and market opportunities available. This practice is part of the Open Innovation model, in which companies seek innovation externally rather than internally while letting their unused ideas be used by others.

The CVC phenomenon is on the rise globally. CVCs participated in 3,234 deals worth \$57.1B in 2019 compared to 1,494 deals worth \$17.9B in 2014 (CBInsights, 2019). This represents more than a doubling of growth in deals and more than a tripling in funding.

North America, which has always ranked in first place in terms of presence of this phenomenon, saw market share stolen by Asia year over year until 2019, when Asia surpassed North America in CVC-backed deal shares (CBInsights, 2019). Europe is still a step behind. Italy trails Germany, France, Sweden, Switzerland, and Spain in its share of CVC-backed deals and finds itself late in pursuing a phenomenon that could be a great help in the renewal and innovation of companies and the entire country.

Despite this, there are still important examples of CVC in Italy, some of which I decided to analyse in this thesis to contribute to the literature on CVC, since it lacks insights relative to the Italian scenario that may be quite limited in the magnitude but still important.

This thesis is structured as follows. The first chapter provides a theoretical background to help readers understand what CVC is. We will analyse the history and development of the phenomenon, beginning with the first CVC, DuPont, who acquired a minority interest in General Motors, and then moving up to the present and the influence of COVID-19. We will talk about the motivations for initiating a CVC program, and provide an in-depth analysis of each of them. Then we will analyse the literature about the organization and structure of CVCs and their funding policies and sources. Regarding governance, particular importance will be given to agency costs deriving from the impossibility in the CVC context of using some of the mechanisms used by IVC to control management behaviours. Finally, we will analyse two mechanisms used by CVC to try to overcome the investment uncertainty related to start-up investing – namely, the staging and the syndication of the investments.

The second chapter delves deeper into the topic by focusing on the value creation that may derive from CVC. We will first focus on the value creation for the CVC parent, beginning with an explanation of the valuation methods best suited to companies using CVC. With regard to portfolio creation, we will argue about the pros and cons of a more or less differentiated portfolio, and those of investments more or less related to the CVC parent's sector. An important part of this second chapter is dedicated to the new paradigm of Open Innovation since its application drives most of the long-term value creation in companies that apply it through CVC. Next, some literature about exploration and exploitation will be provided. Finally, some words will be dedicated to value creation in the target start-up. This chapter also contains comparisons between CVC and IVC and between CVC and acquisitions to better frame the issue of CVC within investment strategies that may seem similar but are not.

The third chapter presents and describes eight CVC cases. Particularly, each case will follow the same pattern, with an initial presentation of the fund and its objective; a detailed analysis of the most relevant investments and how they were incorporated inside the business; and a more general analysis of the other investments and their features. Finally, the last section of each case will offer some insights and summary tables, while the comparison of the results and some concluding thoughts will be presented in the conclusion.

# CHAPTER 1: WHAT IS CORPORATE VENTURE CAPITAL?

## 1.1. Origin and development of Corporate Venture Capital

Although the majority of the scientific paper regarding corporate venture capital has been published over the last 20 years, this phenomenon began much earlier. It is supposed that the first corporate venturer of the history could have been DuPont that during 1919 purchased a 38 percent equity interest in one of its new costumers, General Motors, to help them in a period of lack of funds and to support their growth (Rind, Miller, 1980). However, this was a sort of isolated case, in fact CVC activity occurs in cyclical patterns, called waves, exactly like Mergers and Acquisitions and the first wave of CVC is traceable in the mid-1960s. During the first wave about a fourth of Fortune 500 firms entered the corporate venturing business (Gompers, Lerner, 2000). There are three major trends that have helped the growth of CVC in this first wave: the excess cash flow accrued by many firms, a trend towards corporate diversification and the success of independent venture capital and their portfolio firms (Dushnitsky, 2011). Corporations began to scale back their venture capital activities in 1973, the year in which the IPO market, the principal exit alternative for a venture capitalist, declined (Gompers, Lerner, 2000). During that period, since the practice of ventures by major corporations was quite new, the firsts articles to be written investigated if this form of investment could be successful or not (Block, 1982) and what were the success factors (Von Hippel, 1977; Roberts and Berry, 1984). Some early studies were also particularly concerned about the failure of some CVC during the first wave and tried to investigate the reasons for corporate ventures' failing (Von Hippel, 1977; Hill and Hlavacek, 1977). Moreover, research on the antecedents of CVC was predominantly exploratory and was concentrated on case studies, interviews, descriptive surveys and cross-sectional analysis (Basu et al, 2011; Ludat, 2019).

In the 1980s took place the second wave of CVC favoured by the growth in technology-driven commercial opportunities, favourable public markets and a change in legislation; the amendment of the Employee Retirement Income Security Act, which led to a substantial growth of the venture capital industry (Dushnitsky, 2011). The era reached its peak in 1986 with corporate funds managing \$2 billion, the 12 percent of total venture capital investments and came to end in 1987 with the stock market crash (Gompers, Lerner, 2000). A few years after, in the mid-1990s, there was a surge in CVC due to technological advance and the birth of many internet related new ventures, it was the third wave also called the dot-com Era. This wave had a very big impact, over 400 firms during this period created a corporate venture capital program

and the total amount invested reached \$16 billion, about 15% of total venture capital investing (Dushnitsky, 2011).

The third wave was brought to an end by the technology crash in 2001-2002, similarly as the private venture market (BVCA, 2013). When the dot-com bubble burst many of the world's largest companies investing in dot-com start-ups, lost their money and ceased their CVC project. The crash was formative for CVC, but it scared the corporations causing a slower recovery of the phenomenon in the next wave.

Even after three waves of the phenomenon, the definition of corporate venture capital was not so clear until the early 2000s and the boundaries that defined CVC were blurred, in fact in the first articles was included also the phenomenon of corporate venturing or internal venture that nowadays is considered by some scholars an external category with respect to corporate venture capital.

One of the first and yet most important piece of literature about corporate venture capital, where a clearer definition of the phenomenon was introduced was Henry Chesbrough's article "Making Sense of Corporate Venture Capital" published in Harvard Business Review in 2002. Henry Chesbrough's definition of corporate venture capital was "the investments of corporate funds directly in external start-up companies", the author also stated that in the definition were not included investment made through an external fund managed by a third party even if the investment vehicle is specifically designed to meet the objective of the investing company, and were not included also the corporate venturing, more specifically "the funding of new internal ventures that while distinct from a company core business and granted some organizational autonomy, remain legally part of the company". This strict definition of CVC, even if accepted by most scholars in the sector, is not adopted by some association like AIFI in Italy or BVCA in Great Britain because, a too specific description, risks excluding some forms of corporate venturing which could provide valuable insights for the rest of the industry (BVCA, 2013).

BVCA describes CVC simply as an equity investment made by a corporation or its investment entity into a high growth and high potential, privately-held business and AIFI specify that it's included in the definition also the indirect investment made through vehicles or investment funds (for example Venture Capital - VC funds) that share the company's investment strategy. In this dissertation I will take in consideration all the forms of CVC to give a general view of the phenomenon but then I will concentrate my work in the direct external investments made by corporations.

From Chesbrough's publication on, that coincide temporarily with the end of the third wave of CVC, many more articles have been written. The phenomenon was no longer so recent and there was a greater availability of data and databases that facilitated the use of big samples for

statistical analysis (Ludat, 2019). The majority of the literature on CVC can be divided in two strands of research that represent the two different point of view of the problem, the first strand is from the point of view of the corporation or its investment entity and the second strand is from the point of view of the start-up that have to receive the funds.

In the first strand or research scholars have investigated on various arguments: the reasons that lead big corporation to choose this new type of investment, the organization of the CVC funds, the funding, the investment process, the governance of the CVC program, the CVC as an innovation tool and the CVC's outcomes and performance. The second strand of research that see corporate venture capital as an alternative source of funding is leaner with respect to the first strand and concentrates mainly on the comparison of different source of financing and on the value added that these financing generates on the new venture.

Some authors believe that we are currently experiencing the fourth wave of corporate venture capital (Brigl et al., 2016; Bielesch et al., 2012; Dushnitsky, 2011). A 2016 study by the Boston Consulting Group argued that CVC, at the moment, was already fully entrenched in the corporate landscape and it was growing deeply and quickly with investment in CVC between 2010 and 2015 almost tripling (Brigl et al., 2016). Bielesch and colleagues affirmed in a 2012 study that "CVC appears to be here to stay" however, the COVID-19 pandemic is disrupting corporate venturing, evidenced by a 24% decline in CVC-backed deals in the first quarter of 2020 compared to the previous year (Brigl et al., 2020).

CVC participations in deals shows a contrasting effect during the pandemic with some corporations closing their corporate venturing activity, others paralyzed by the events and others accelerating venturing activities (Brigl et al., 2020). For some industries (Pharma, software, households' products) which demand has remained robust, it may be advisable to accelerate CVC programs and innovation to help with near term Covid-19 challenges while for other industries (Auto, durable goods, insurance) it may be better to hibernate or ramp down venturing units for a better liquidity management and cost control (Brigl et al., 2020). It will be interesting to see if the pandemic will slow down CVC resulting into an end of the fourth wave or if this phenomenon will resist.

## 1.2. Motivations for CVC

The motivations for initiate CVC programs have been investigated by numerous works among the literature. In this work I decided to begin from the classification of Boccardelli and Sobrero (2002) that summarize the different motivations for corporates to do Venture capital in four main categories: CVC with a spin-off motivation, CVC with a strategic motivation, CVC for

the social responsibility and in some cases, or rather in a few cases as we will see, CVC with a financial motivation. I decided to begin with their classification to include some literature about spin-off and social responsibility motivations that are usually treated more marginally and then to integrate the strategic objectives that are the most important, with a more specific classification from Maula (2007) and an in depth analysis of the literature, to end talking about the financial motivations.

### **1.2.1. Strategic motivations**

Boccardelli and Sobrero (2002) affirm that **spin-off motivations** are one of the objectives to start a CVC program. Sometimes internal R&D process manage to develop a new product, a new technology or a new patented idea that is not strictly bound with the core business of the mother company. In this case the company could decide to disinvest through a spin off, and if the mother company wants to maintain certain form of control under the spin off company, using a CVC vehicle could be a good solution. Through a CVC in fact, the company can maintain a minority stake equity investment in the spin off, ensuring a certain degree of control but leaving at the same time to the new company more independency from the bureaucracy and from the internal rigidity of the big firm. As said by Festel (2014) "...spin-outs can overcome innovation hurdles within established companies, like bureaucratic thinking, fear of cannibalism or the not-invented-here syndrome. R&D spin-outs can more easily pick up impulses from outside...".

The fact that the spin-off is actuated through a CVC fund is "a concrete opportunity of intervention to continue to monitor the path in many, if not all, of its aspects of birth, development and economic exploitation even of that innovation that does not supports the business development strategies in which the corporate venturer operates." (Boccardelli, Sobrero, 2002).

Another motivation for the creation of CVC funds is **social responsibility**. In this case the CVC fund is based on investment in new businesses aimed at creating jobs in specific local areas (Boccardelli, Sobrero, 2002). Other social objectives can include for instance the aim to increase corporate image, to support regional development processes or to instigate ecological awareness (Da Gbadji, Gailly, 2008).

Those two last motivations, spin-off and social responsibility, that Boccardelli and Sobrero keep separate, however, could be grouped within a larger macro category, the CVC with

strategic motivation. The reason is that the spin-off process can be view also as a strategical choice from the parent company if it supposes that the two separated entities can create more value separately instead than together, while the social responsibility motivation is aimed at the strengthening of the corporate image that is a strategic tool to gain costumers consensus and boost the sales.

The purely strategic motivation to which Boccardelli and Sobrero (2002) refers, however, is to bring inside of big corporations, innovation that is difficult or impossible to produce internally but as we will see, this is just one of the numerous strategic motivations for CVC investing. CVC aims to achieve a presence in very innovative technological and therefore risky areas or in areas far or complementary from the business in which the corporate operates (McNally, 1994). The fact that corporates fund R&D projects through the participation in the activities of small independent companies, allows them to open a window on frontier technologies and in some case to activate internal resources on neglected lines of development (Boccardelli, Sobrero, 2002). Usually, a CVC fund has as a mission to help the parent company to grow through the investment in start-up companies that can bring external ideas, new technologies, new products or processes into the firm. (MacMillan et al, 2008). The strategic aim of CVC has been discussed also by Chesbrough (2002) that affirm that some investments are strategical and seek to identify and exploit synergies between itself and a new venture to increase the sales and profit of the corporation's own business. Chesbrough highlight the importance of the strategic motivation rather than the purely financial returns pursuit by asserting "while corporate VC investments have generated decidedly uneven financial returns, they should not be judged primarily on that basis. They should be thought of as important ways for a company to fuel the growth of its business" meaning that apart from the financial returns, the strategic benefits apported to the firm are very important.

The strategic motivation behind CVC have been investigated by many studies because it seems that it is the most relevant motivation to start a Corporate Venture Investment (CVI) and it is also very diversified. The Global Corporate Venture Capital Survey of 2008 by Ernst&Young created a list of the major strategic objectives that CVC pursue sorted by importance. The list is depicted in Table 1.

Table 1 - CVC strategic objectives

	Mean score (5= very important)
Map emerging innovations and technical developments	4.7
Window on new market opportunities	4.6
Import or enhance innovation within existing business units	4.2
Develop new products	3.9
Provide additional revenue growth opportunities for parent company	3.8
Develop relationships with independent VCs	3.7
Identify and establish partnership and joint ventures	3.7
Identify acquisition candidates	3.4
Leverage technological developments	3.2

Source: Ernst&Young, 2008

Among the various strategic objectives pursued by CVC, those that stay in the higher position of the list are those connected with innovation and consequently the development of new products and the entrance in new markets. This research is consistent with scientific studies that see innovation as one of the major strategic goals of CVC, but the strategic motivations are much more.

Other scholars, through a deep analysis of the literature, have further divided the strategic objectives into subgroups to try to represent each strategic motivation separately. Maula (2007) have identified three main categories of strategic objectives, each of them further divided into subcategories: the learning objectives, that comprehend the market-level learning, the venture-specific learning and the indirect learning; then the option building objectives, that comprehend the option to acquire companies and the option to enter new markets; and finally the leveraging objectives that comprehend the leveraging of own technologies and platforms and the leveraging of own complementary resources. I rearranged some of these objectives by completing some of them with examples and others with some news from the most recent literature.

The **venture specific learning** refers to learning from the relationship with the companies that are already in their portfolio of investments. This objective is related to innovation and can be compared to the third objectives in Table 1, import or enhance innovation within existing business units. A Corporation that wants to increase the internal efficiency of its R&D capabilities could invest in startups with technologies, competencies, knowledge base, products

or processes similar to the ones that it wants to develop. Those investment are aimed at the achievement of innovation to fill an already identified gap in the company's technology portfolio.

The literature has not clearly demonstrated yet the process that lead an equity investment in an innovative company to bring new knowledge in the parent company but there are studies which provide some hypotheses and which demonstrate the veracity of this effect.

Dushnitsky and Lenox (2005) assert that there are at least three channels to facilitate firm learning from entrepreneurial ventures:

*First, the due-diligence process provides the firm a unique opportunity to learn about entrepreneurial inventions even prior to committing capital. Post investment, an investor may learn about novel technologies by maintaining board seats (or board observation rights) as well as utilizing dedicated liaisons. Finally, a failing venture may also constitute a learning experience to the extent that it offers technological insights, or conversely points at market unattractiveness.*

The authors have also demonstrated in their study that exist a positive relationship between corporate venture capital investments and future patent citation levels in the firm. This means that the venture-specific learning motivation is a reasonable and achievable goal for a CVC that is willing to pursue it.

The **market-level learning** is quite similar to the previous objective with the difference that the learning process in this case come from the outside and not from the existing investment portfolio. It is more marked to the research of new market opportunities and new technologies to keep the pace with the changing environment. To better understand the difference in the two objectives we can use the comment of Maula et al. (2013) “the contribution of CVC activities to corporate innovation might be less crucial in *transferring patentable knowledge* to the corporate parent than in *directing top management's attention to important technological changes* in the firm's external environment”, the “transferring patentable knowledge” can be assimilable to the venture-specific learning objective we mentioned before, while “directing top management's attention to important technological change” refers to the market-level learning objective that we are analysing in this section. The authors with this finding want to emphasize the importance of this last objective in CVC investing activity.

Established firms already have their own business to think about and it may be difficult for them to be well informed about all the novelties that could affect their market. This objective

aims to provide a continuous exposure to novel and pioneering technologies in order to help corporate investors to identify new business opportunities and to be aware of future technological discontinuities (Jeon, 2017), defined as “fundamental shifts from one dominant technology to another.” (Maula et al, 2013)

As affirmed by Dushnitsky and Lenox (2006) “equity stakes in entrepreneurial ventures may provide a window on technology and aid in firm innovation efforts”. This motivation can be associated with the first and second objectives reported in Table 1., map emerging innovation and technical development and window on new market opportunities.

The **indirect learning** is described as the learning from the venture capital process and comprehend different types of learning. Through an analysis of the literature, Maula (2007) points out five types of indirect learning: learning to change corporate culture, learning to train junior management, learning about venture capital, learning to support the development of internal venturing processes, learning to provide contacts with related actors like investment banks, scientist and venture capitalist.

However, another indirect process of learning can be added to the list: it is the learning to select and to value investment and acquisition target through the use of CVC investing, also called capability development by Jeon (2017) in a personal elaboration of the strategic motivation of CVC. Firms that are engaged in CVC activities have the possibility to gain information about numerous starts up, not only the firms in which they already have an equity stake but also the possible targets.

The continuous process of selecting and investing in a portfolio of innovative firms leads the company to create a know-how that will help in the selection and valuation of acquisition targets. The selection capabilities refer to the ability to select entrepreneurial companies that are likely to generate financial and strategic returns while the valuation capabilities concern the ability to take the right proportion of the startup’s equity (Narayanan et al., 2009).

Benson and Ziedonis (2009) have found that firms that are continuously involved into CVC activities earn greater returns when acquiring startups with respect to firms that are less involved in this type of investing, even controlling for the profitability, size and acquisition experience of these acquirers. One of the main reasons is that CVC-related activities improve the ability of firms to identify and value startups as possible targets for acquisition through the increased exposure to the technological and market pursuits of startups and through improved abilities to monitor developments in these external activities (Benson, Ziedonis, 2009). This indirect process of learning through the CVC investment activity helps the parent company to recognise the startup that are worth an acquisition allowing the corporation to make better investments.

The **options to acquire** companies' objective refers to corporate venture capital investments made as options to acquire the portfolio startup in the future if it turns out to be strategically valuable. The previous CVC investment which may be followed by an acquisition, can be viewed as a sort of call option that give to the corporate investor the possibility but not the obligation to acquire the startup at a lower price since they already own part of the equity stake. The CVC fund makes a limited investment in the present and acquires the right to postpone the investment decision to buy or sell at a later point in time (Keil, 2000). This theory was initially applied to joint agreements, that were suggested to be used as options to acquire new companies and to expand in response to future technological and market developments (Kogut, 1991; Laamanen, 1999). Successively this theory was applied also for the more recent CVC phenomenon. Corporate venture capital investments can be seen as staged investment that "reduce the risk to the buyer by giving an option to re-evaluate the situation later before making new and additional commitments" (Maula, Murray, 2000). After having established that CVC can be used as options to acquire, it is important to evaluate if companies are successful in exercising this type of option.

Maula and Murray (2000) found that less than 6% of corporate venture capital investment in their sample had been followed by an acquisition and this is a very low share. In the majority of the cases, it was an external corporation that acquired the portfolio company (Maula, Murray, 2000). Laamanen (1999), which similarly has found in his study that in only a few cases of contractual collaboration the option to acquire played an important role, tries to explain this phenomenon by saying that "For the large companies, it would not seem to be rational to make large investments in collaboration with small companies owned by entrepreneurs. It is more rational to acquire the companies immediately and start investing after the companies have been bought." So, although the option to acquire is reported ex ante as an objective of CVC investments, due to operational constraint including potential conflicts of interest and agency costs between stakeholders, the option is very limited (Maula, Murray, 2000).

However, it is suggested by Maula and Murray (2000) that CVC can have a related intelligence role as a supporting tool for acquisitions. The more attractive firms found by CVC in their examination of deal flow may be referred to the M&A department of the parent company and become a possible acquisition target. This is the indirect learning objective mentioned before, a continue CVC activity allow to learn and develop a know-how in finding the better target companies leading the subsequent acquisitions to be more successful.

The **options to enter new markets** refers to the possibility that CVC investing can provide to the entering in a new market or a new business. Mitchell and Singh (1992) analysed the literature on diversification, competitive strategy and technological innovation that suggest that incumbents should expand into emerging subfields and should do it rapidly to provide a competitive advantage and allow the appropriation of earnings, however, they argue that incumbent should adopt a more cautious approach by limiting their investment exposure using alliances. The same logic can be applied to CVC investment that can be used as a cautious approach to gain an option to enter in new markets.

Keil (2000) specifies that this option can be developed without necessarily relying on the relationship that created the option, meaning that an acquisition or a use of the enterprises' resources, patents or distribution channels is not necessary, but rather it might be sufficient to utilize the learning that these relationships provide.

External corporate venturing, in fact, allow a learning process that can help to build knowledge of technologies, markets and business models that enable a corporation to explore and exploit new business areas or new markets (Keil, 2000). Anyway, firms must be prudent when deciding where and how much to invest. Increasing the amount of equity investment in a new venture can improve the accessibility of the target firms' knowledge but this improved accessibility will not endlessly increase the corporate investors' technological diversity (Lee, Kang, 2015). The reason is that by concentrating its resources on a specific knowledge, the other alternatives that could have increased the diversity and that could have offered other windows on new markets and technologies, will remain undiscovered. In the same way, if a CVC focus on a specific field, for example the field in which its parent company already operates, it will gain a deeper understanding of the technologies used in that field but these technologies may be too similar or overlapping (Lee, Kang, 2015), "In other words, a focused investment in a specific technological field can be seen as exploitative learning to strengthen the depth of knowledge rather than as explorative learning for expanding the breadth of knowledge." (Lee, Kang, 2015). A good example of a company that is applying CVC investments as an option to enter new markets without forgetting to diversify from its core business is Google that through GV, is investing in numerous sectors: from marketplaces and apparel to new forms of transportation and media, from applications to infrastructure, and across the enterprise spectrum from developer operations to security and data platforms, across the entire healthcare spectrum, including care delivery, health IT, devices, diagnostics, and therapeutics and then food and agriculture and finally robotics, hardware, quantum computing and deep tech. (Lee, Kang, 2015; GV website).

**Leveraging own technologies and platforms** is another strategic objective for adopting CVC investments, this objective aims to stimulate demands for the core products and technologies of the firm by sponsoring companies using and applying them (Maula, 2007). This objective requires that the start-up is using a technology or service provided by the corporation and if this kind of technology is new, investing in a firm that use it can increase the demand for that specific product or it can provide a standard influencing the market to use it too. The problem is that if the start-up company is quite small, the effect could be negligible. For example, in 1997, Intel invested in Berkeley Networks, a company that used Intel processor to make low cost switches and routers for communications network (Chesbrough, 2002). However, the incremental demand created by Berkley's business was so little that Intel saw the investment primarily as financial rather than strategic (Chesbrough, 2002).

Another way in which CVC can achieve an increase in demand for their products is by investing in startups that are developing complementary products or services. A company can use VC investment to stimulate the development of the ecosystem in which operate, that is the set of costumers and/or suppliers that stimulate the demand for the company's own offerings (Chesbrough, 2002).

In some cases, corporations can use CVC activity to shape markets proactively (Maula, 2007). For instance, Intel, who was highly dependent on the development of Microsoft operating system, saw Linux as a promising alternative and, together with other companies such as IBM, Oracle, Novell, Compaq and Dell invested in this operating system. Their investments proactively shaped the industry and helped Linux to become a more credible alternative (Young and Rohm, 1999 in Maula, 2007).

**Leveraging own complementary resources** refers to another objective pursued by corporate venturer. More precisely it refers to the objective of leveraging complementary asset of the corporation like distribution channels and production facilities (Maula, 2007).

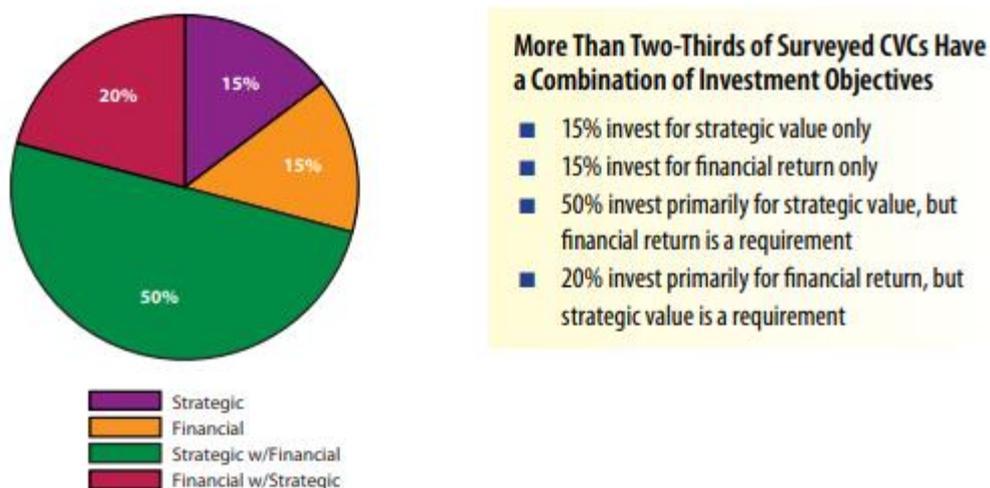
Technology-based ventures are known to be better at adopting new technology compared to big corporation. They are more flexible and more rapid at developing a new product after the R&D process is done, however small ventures have usually a restricted distribution network which prevents them from easily placing their products on the market (Maula, 2007). Big companies in this case can use corporate venture capital to add new products to their existing distribution channels and can try to exploit this opportunity even more by trying to acquire the license of the startups' technology. Even in the case in which start-up companies reject the opportunity to sell their technology license, the situation could be favourable for both companies if they agree to make some marketing agreement (Maula, 2007). The corporate venturer in fact will have the

possibility to exploit its distribution channel and gain something from the deal with the venture while the start-up will take advantage from the distribution network of the investor. Companies can use CVC investments to leverage their own complementary resources also by enabling the use of eventual excess plant space, time and people (Silver, 1993 cited in Maula, 2007).

### 1.2.2. Financial motivations

The first literature about corporate venture capital objectives put a lot of emphasis on the financial return motivation. Siegel, Siegel and MacMillan (1988, cited in Casson et al., 2006) in fact found that corporation ranked “Return on investment” as the most important objective, anyway they asserted caution in interpreting their result since the financial returns were ranked as less than essential in 42 per cent of the cases, giving more importance to strategic objectives. Their advice to be cautious on their finding is confirmed by subsequent studies like the one of MacMillan (2008) in Figure 1.

Figure 1 - Do CVCs invest for strategic or financial objectives?



Source: MacMillan, 2008

As reported on the figure, they found that 15% of the sample of CVC invested for strategic value only and that a 50% invested primarily for strategic value but consider the financial return as a requirement of the investment. The vast majority of the sample has therefore primarily a strategic goal, this goal however go hand in hand with achieving financial returns. An investment that makes the company lose money is never a good investment, so a minimum of financial return is always sought even if the focus is strategic. All investment should be

financially sound and should cover at least the investment amount and the various expenses, then if the returns are higher it is better, while if they are lower, they can be compensated by strategic value creation in the long run. In other words, if the major objective is strategical, in the long run we will see also financial outcomes, and those outcomes would be just the direct consequence of a good strategical choice. In turn, a focus on achieving short term financial goals could have a negative effect on the ability to reach strategic objectives and will cause a lower financial return in the long run (Ernst et al, 2005).

Moreover, it would not be a good choice to start a CVC fund just to pursue financial goals because in the market there are other form of start-up investment that are less costly and financially more attractive, for instance, investments in VC funds (Ernst et al, 2005).

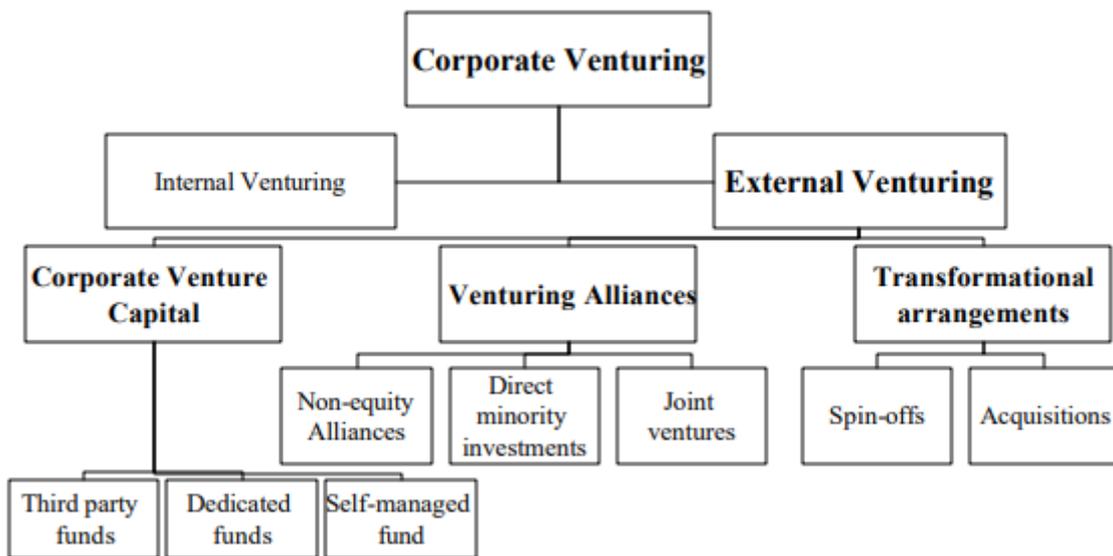
The theory is also reflected in the data, just the 15% of CVC fund invested in start-up companies just for a financial return and a 20% invested primarily for financial return but strategic outcome was a requirement.

## 1.3. Organization of CVC

### 1.3.1. Organizational structure

CVC programs can be structured and organized in various way depending on the degree of involvement of the corporation. One of the first classification about the organizational form that corporate venture capital activity can take comes from Keil (2000). Through a case analysis based on seven leading company in the ICT sector in the US he first developed a classification of the various form of external corporate venturing and then he further recognized and classified three types of CVC organizations. (Figure 2)

Figure 2 - Modes used for external corporate venturing

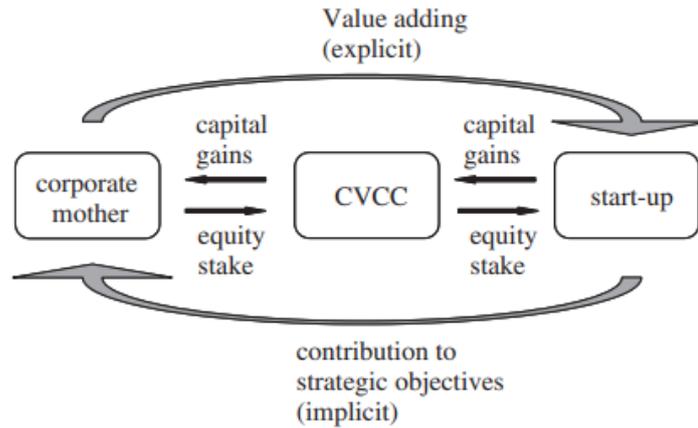


Source: Keil, 2000

Before focusing on the CVC is useful to introduce the concepts of Internal and External venturing to better understand the whole graph. Internal venturing refers to venturing activities in which the ventures are created and kept inside of the established organization (Keil, 2000) while External venturing “refers to corporate venturing activities that result in the creation of semi-autonomous or autonomous organizational entities that reside outside the existing organization” (Sharma & Chrisman, 1999 cited in Keil, 2000). Among the External venturing we can find Transformational arrangements like spin-offs and acquisitions, venturing alliances like joint ventures, direct minority investments, non-equity alliances and finally corporate venture capital.

Keil (2000) identifies three distinct groups of CVCs that a firm can undertake. The first is the investment into funds managed by traditional venture capital firms. In this form, the venture capital firm collects funds by several investors and the corporation act as one of the limited partners. The second option is to set up a dedicated fund with a traditional venture capital. In this case the venture capital firm manage the fund but receive money just by a single investor that is the corporation. In the third option the corporation can set up its own self-managed fund that can be set as an investment subsidiary of the corporation. In this case the legally separated Corporate Venture Capital Corporation (CVCC) act as an intermediary by investing the mother’s fund into a start-up either as the sole investor or through syndicated investments with other CVCC or other VC firms. (Ernst et al, 2005). A graphic representation of this investment flow is reported in Figure 3.

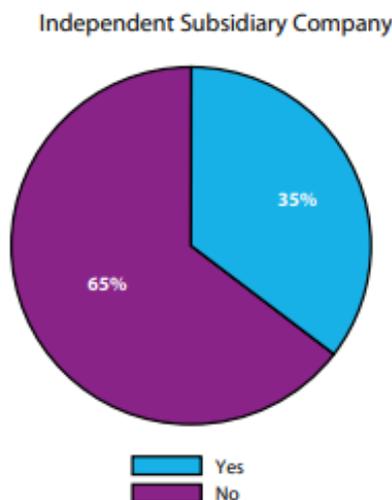
Figure 3 - Typical structure of corporate venturing



Source: Ernst and colleagues, 2005

This last type of organization, intended as a CVC fund controlled by the parent firm but legally separated, is the one that is more frequently taken in consideration when investigating CVC. However, this form is not the one that represent the majority of the CVC investments. According to MacMillan and colleagues (2008) that in 2007 conducted a survey of 48 CVC organizations, about one third of the sample of CVC were organized as an independent subsidiary while the others operate as a group within the parent company organization (Figure 4). This survey has some limitations, for instance the fact that it was conducted more than ten years ago or the fact that it refers to a quite small sample, however it is a good starting point to delineate the profile of the typical CVC company and as there have been no major changes in the CVC sector since then, we have reason to think that things have not changed that much.

Figure 4 - What organizational forms do CVCs take?



Source: MacMillan and colleagues, 2008

As already mentioned, the range of model and systems used by corporation to make equity investments into high growth privately held companies takes a wide variety of forms, this leads to different classifications of the CVC forms by different authors.

A quite different and more recent classification of the types of CVC with respect to the Keil's one is proposed by the British Private Equity and Venture Capital Association (BVCA) that tried to organize CVC in three operative models based on variables related to the strategic focus and the type of funding of the structure. BVCA identify another category with respect to Keil that is the direct investment from the corporation into the start-up and then put in the same category the use of an External fund to make the investment and the creation of an external fund with a VC company, the first and second model find by Keil, respectively. The three BVCA categories are described below:

1. Corporate/direct investment - Balance Sheet Model: This type of model of CVC does not require the creation of an independent subsidiary, it is referred to as a direct investment from the corporation to start-up companies.
2. Internal dedicated fund – GP Model: This model refers to CVC that are organized as subsidiaries of the parent companies. In this case the Parent company still control the CVC fund but this latter benefits from a greater degree of decision making and strategic autonomy.
3. External Fund – LP Model: In this case, the company that want to make an equity investment in a start-up, does so indirectly by investing in a VC fund, the company is configured as one of the Limited Partners of the VC and the management of the investment is entrusted to VC General Partners.

The third model of CVC is not exactly considered a CVC investment by the literature, Chesbrough (2002) in fact specifies that the CVC definition “excludes investments made through an external fund managed by a third party”. Anyway, this type of investment can be functional to put the foundations to better carry out the CVC activity, it allows in fact, to develop skills and competences regarding venture capital while understanding the dynamics of the market (AIFI, 2018)

BVCA apart from defining the three categories of CVC describes their four main aspects: the purpose of the investment, the structure of the fund, the talent that operate in the CVC and the success measures (Table 2).

Table 2 - CVC's categories and main aspects

	Corporate/Direct Investment (Balance Sheet)	Internal Dedicated Fund (GP Model)	External Fund (LP Model)
<b>Purpose</b>	Gain direct business and technology experience in emerging areas	Emerging business and technology with more autonomy for step out options	Develop internal VC capabilities whilst gaining market awareness and understanding
<b>Structure</b>	Direct investment, funding each deal, closely related to business divisions and future business opportunities	Corporate acts as LP in a 100% captive fund. Greater fund autonomy	GP external firm LP corporate part investor Decision on investment GP in fund parameters
<b>Talent</b>	Internal corporate talent	Mixture of external VC hired and internal corporate talent	Experienced VCs and potential secondees from corporate
<b>Success measures</b>	Measurement of direct strategic inputs	Primarily financial with a level of strategic exposure	Predominantly ROI
<b>Examples</b>	BP, Bosch, Panasonic	Unilever Ventures, Reed Elsevier Ventures, Bloomberg Beta	Siemens Venture Capital (SVC), Physic (Unilever)

Source: BVCA Guide to Corporate Venture Capital

Starting from the organizational structure of the CVC, other authors have tried to define whether and how this structure influences the growth potential of the investor and business diversification of the fund.

Yang and colleagues (2016) have taken in consideration two types<sup>1</sup> of CVC structure; one is labelled as “controlled CVC programs”, so a program fully internalized where there is tight monitoring and regular exchanges of personnel between the CVC and the parent and the other labelled as “autonomous CVC programs”, usually formed as a wholly owned subsidiary with less formal reporting relationships with the parents and a greater discretion when making investment decisions. The authors, based on a 152 corporate investors’ sample, found that:

- the autonomy of a CVC program increases its CVC portfolio diversification.
- when the autonomous level of a CVC program is high, there is a positive relationship between a corporate investor’s growth opportunities and CVC portfolio diversification and when the autonomous level is low the relationship is negative.
- when the autonomous level of a CVC program is high, there is a negative relationship between a corporate investor’s business diversification and its CVC portfolio diversification and when the autonomous level is low the relationship is positive.

Given these findings we can say that a more autonomous structure may be advisable to CVC. In fact, managers of autonomous CVC may be more likely to pay attention to technologies/markets outside the parent’s business domains and they may be more likely to explore new industries and increase industry diversification of their investment portfolio

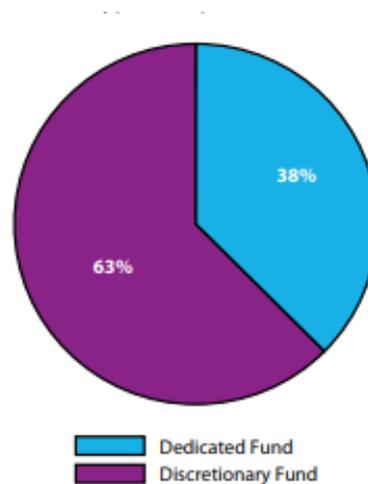
<sup>1</sup> Yang and Colleagues (2016) does not include in their classification of CVC the investment in an external venture capital fund even when the investment vehicle is funded by a single investing company.

leading to a positive effect on the growth opportunities of the parent company (Yang et al, 2016). The same idea has been advocated also by Gompers and Lerner (2001, cited in Yang et al, 2016) that affirmed that venturing activities should replicate flexibility and freedom of the VC model as much as possible. Against, there is the fact that a high level of autonomy may increase too much the diversification of the portfolio, leading to a shift away from the planned strategic benefits. It is in the responsibility of the firm to balance the benefits and the downsides of a higher or lower degree of autonomy.

### 1.3.2. Funding structure and sources

CVC funds can differ also in the funding structure. There are some CVC that have a “dedicated” investment fund that means that a fixed amount of capital is provided by the corporation to the CVC for investments. This type of funding structure is like the one used by Independent Venture Capital and is chosen by approximately one third of the CVC funds (MacMillan et al, 2008) (Figure 5). The alternative to a dedicated investment fund is a “discretionary” or “evergreen” investment capital structure, the funding in this case is not fixed and is allocated once investment opportunities arise, this type of funding structure is the most utilized among CVC (MacMillan et al, 2008) (Figure 5).

Figure 5 - Type of capitalization



Source: MacMillan, 2008

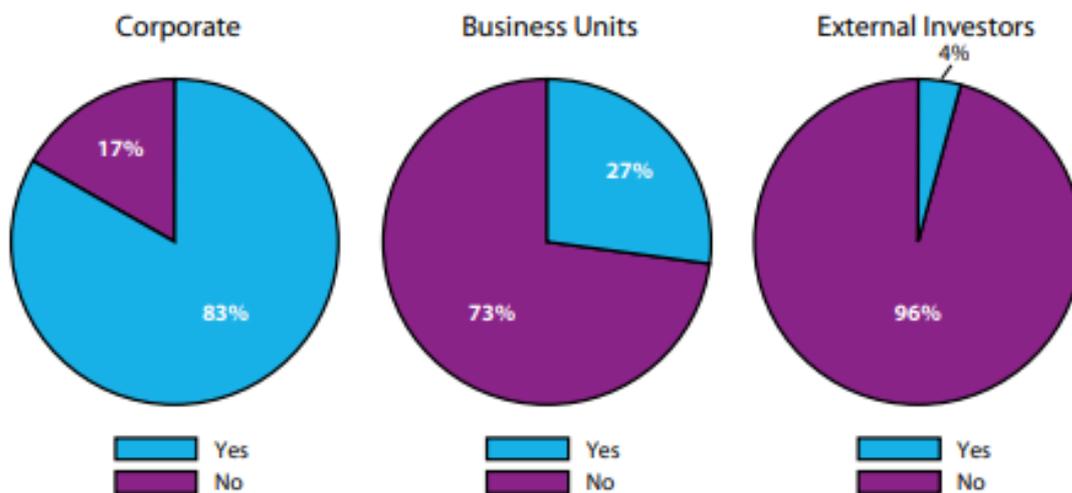
There are pros and cons in both alternatives. As a pro, a “dedicated” investment fund structure guarantee to the fund a stable source of capital, the possibility to use it at any time and more speed if it needs to be used, as a con a fixed amount of capital put a cap on the fund available risking to lose attractive opportunities. A “discretionary” fund structure instead guarantees

economic funds when there are attractive investments but require the CVC to ask to the parent for funding, losing flexibility, time, autonomy.

The funding structure can take different forms but also the source of capital can differ among CVCs. First of all, CVC investments require the availability of internal capital as source of funding, unlike big M&A investment that recur to the use of debt financing (Yang, Narayanan, 2014). There are three main sources of funding for a CVC and they are: the corporate level of the parent company, the business units within the parent company and possibly external investment partners. (MacMillan, 2008).

In more than four-fifth of the cases CVCs are funded by corporate headquarters. Sometimes also specific business units contribute to the funding, but this happens just in one out of four cases, usually when the mission of the business unit is aligned with the CVC mission (MacMillan, 2008). The possibility of an external investor contributing to the funding is rarer with just a 4% incidence (Figure 6).

Figure 6 - What are the sources of capital for CVCs?



Source: MacMillan, 2008

## 1.4. Governance

Corporate governance is defined by Shleifer and Vishny (1997) as “the ways in which suppliers of finance to corporations assure themselves of getting a return on their investment”.

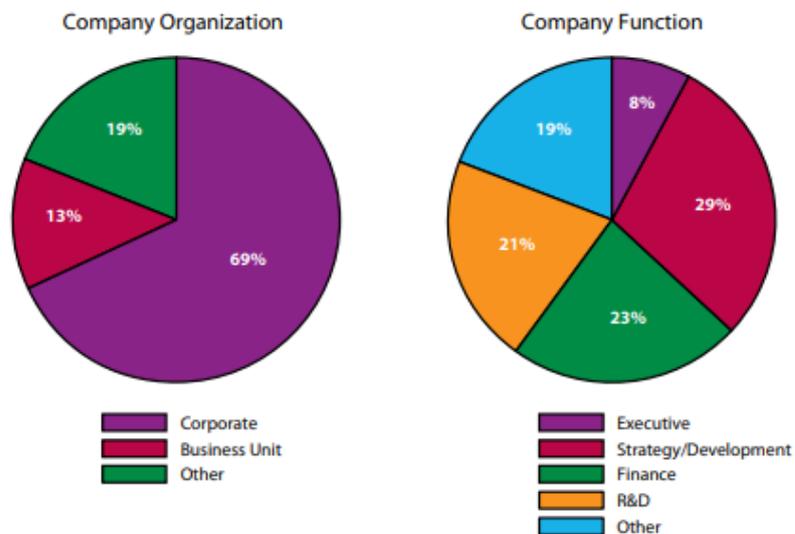
CVC is not a corporation, sometimes, as already mentioned, it can take the form of a subsidiary, so it is a separated entity and sometimes the CVC is internal to the corporation. In both cases the governance has to be studied separately from the governance of the parent corporation because the control and management of this funds impact on their activity. For CVC, the

governance is a multi-faced topic, apart from the compensation for the personnel in charge of making investment, it also covers the structure of the programme and the degree of autonomy it possesses to try to advice one type of structure or another (Casson et al, 2006).

### 1.4.1. Reporting relationship

To apply the definition of corporate governance to CVC, it is essential to begin from who are the “Suppliers of finance”. For CVC, the main sources of capital as already discussed in (Figure 6) are mainly the corporate headquarters and the Business Units. Since the suppliers of finance have to assure themselves of getting a return on their investment it is not surprising that the reporting structure follows a similar pattern (Figure 7). As the managers of a corporation has to report to the creditors and the stakeholders, that are the source of funding, also the manager of a CVC programme has to report to their source of funding. It is interesting also to see that CVC managers can report to different functions in the parent company (Figure 7).

Figure 7 - Who do CVC report to?



Source: MacMillan, 2008

MacMillan (2008) found that almost one third of CVCs report to Strategy/Development at either the corporate or business unit level, approximately one-fifth reported to finance function, and another one fifth reported to the R&D function while the remaining reported to the executives or others. In this case the fact that some CVC report to a function or another reflects the objective and the way in which the CVC is seen inside the corporation. For example, a CVC which is seen as a window on new technologies by the parent firm, may be asked to report to

the R&D function and this may also affect the investment activity of the CVC, which would invest more on innovation self-reinforcing its R&D objective.

A more concentrated or more diffuse reporting structure can also affect the CVC performance. Titus and Anderson (2018) have investigated the value creation of CVC investment based on their operational structure and on their environment. They defined the operational structure as “the extent to which a firm is more managerially concentrated or more diffuse in its business segment reporting structure”. In other words, a more concentrated operational structure means that the decision making authority is concentrated among few executives, so the CVC have to report directly to one of those. A more diffuse operational structure instead implies that the decision-making authority is more fragmented and is delegated to lower level executives.

Based on eight years of observation of US corporate investors, Titus and Anderson (2018) found that a CVC investment is more likely to create value when the firm pursuing the investment is operationally concentrated and operate in less munificent environment. The reason is probably that in operationally concentrated structures, senior executives are more aware of the strategic challenges their lower level business is facing and are more aware of how the investments fits within the firm’s strategic focus. This leads their investments to capture new opportunities and to create more value to the firm (Titus, Anderson, 2018).

#### **1.4.2. Incentives and agency problems**

The remuneration based on incentives is founded on the agency theory (Jensen, Meckling, 1976). The authors first defined the agency relationship as “a contract under which one or more persons (the principal(s)) engage another person (the agent) to perform some service on their behalf which involves delegating some decision making authority to the agent.”

Then they assert that when there is separation of ownership and control, there is a good reason to believe that the agent, so the manager that is delegated to act on behalf of the owner, being self-interested and utility maximiser, not always will act in the best interest of the principal, so the owner(s).

To solve this problem, in Independent Venture Capital the remuneration of the General Partner is based primarily on carried interest. Carried interest remuneration is a sort of incentive because it is a percentage of profit that is given to GP, usually the 20%. The more an investment will yield and the more the general partners will get, aligning in this way the interest of the General and the Limited partners.

Furthermore, general partners also commit their own money in raising the fund, risking in case of a bad investment, a loss on their personal assets (Hill et al, 2009). Lastly, the investment in

a VC fund lasts a definite time period so the GP feel the pressure to perform satisfactorily and if they don't, they may incur the risk to not be able to raise further funding from the outside (Yang, 2006).

In CVC programs the organizational and incentive structure are different because the funds are usually internalized within the parent company or eventually, they are wholly-owned subsidiaries. For this reason, some of the mechanism that are used by IVC to control agency costs are missing in the context of CVC investments (Yang, 2006).

The first and more important point is the salary. In CVC, professionals are generally rewarded in similar way to managers in other part of the corporations, for instance a base salary plus a corporate-wide bonus. One of the reasons is that standardized compensation is administratively simple and is also perceived as a signal of fairness by the rest of the workers (Hill et al, 2009). Another reason is that the parent corporation fears that they might need to make huge payments if the CVC investment were successful (Gompers, Lerner, 2000). Another reason for corporations to be reluctant to reward personnel through profit sharing (carried interest) provisions is that it is more difficult to evaluate the performance of the investment. Independent Venture Capital funds receive a specific exit proceed at the end of the investment; it is sufficient to subtract the committed capital to these proceeds to find the total profit of the investment. For CVC funds, in turn, it is not sufficient to calculate the financial benefits. In fact, they can be low, but it doesn't mean that the investment is bad. The strategical benefit may be huge but still difficult to quantify and so it is the carried interest provision that should be based on these strategic outcomes. To overcome this latter problem some authors (Gompers, Lerner, 2000; Erns et al, 2006) have proposed to base the compensation of CVC managers on the achievement of predetermined strategic goals, however, other authors like Hendry (2002) argued that "attempts to specify outcomes can be dysfunctional, as agents perform to the specific terms of the incentives offered, rather than in the more general interests of their principals". So, the definition by the parent company of an objective to be reached and of the relative compensation offered can divert the attention of managers from achieving equally important but not specifically defined objectives.

In sum, it is very difficult for CVC to use the same compensation system used by IVC, but it is important to at least try to find a compensation scheme that is as similar as possible because not having an adequate rewarding system would lead the corporations to be unable to attract top people and may provoke agency behaviours such as unnecessary portfolio diversification and preference to later stage investments (Gompers, Lerner, 2000; Yang, 2006).

The second point that makes CVCs more susceptible to agency problems than IVC is the funding structure of the investments. Since, unlike the GPs of IVC funds, CVC managers are

not obliged to commit investment capital to the fund, the financial risks incurred by CVC managers do not result in the loss of personal assets (Hill et al, 2009). This will result in a further distancing of the interests of principal, the corporate, and the interests of the agent, the manager of the CVC, which could exacerbate agency problems.

The third point is referred to the fact that IVC fund has to perform satisfactorily to guarantee that they will find other people willing to fund their next project. In CVC, this pressure is not felt because CVC programs usually obtain the funds from the budget allocation within the parent (Yang, 2006).

## 1.5. Investment

The investment in start-up companies is very risky for CVC. Start-up companies are usually pioneer of technology and innovation and it is not secure that the business will succeed. In fact, most of the time start-up companies fail, just in few cases they make it and are capable to gain very high returns but there is no way to predict which of the two categories the investment belongs to. To try to overcome the investment uncertainty related to start-up investing there are two investment practices that CVC tend to use: the staged investment and the syndicated investment (Dushnitsky, Shapira, 2010)

### 1.5.1. Staged investments

Staging refers to the investment practice that see the investor dividing the investment capital in different part that will be given to the emerging company at different stages of their life. Venture capitalist rarely will invest lump-sum all the external capital that the start-ups need for accomplish their business plan (Sahlman, 1990) and CVCs act in the same way. Staging the investment permit to evaluate how is the investment going at every stage that an infusion of capital is necessary so the investor will have the possibility to decide if and how much to invest in each stage. Gompers (1995) demonstrated two examples of how this evaluation work, the first is Apple and the second is Federal Express. They highlight the extremely different path these companies were going through by highlighting the growing /decreasing amount of the investment at each stage and the higher/lower price per share. While Apple Computer was given a first round of financing of \$518,000 in January 1978 at a price of \$0.09 per share and a third round of financing of \$2,331,000 in December 1980 at \$0.97 per share reflecting a very good performance, Federal Express was given an initial round of investment in 1973 of \$12.25

million at a price of \$204.17 per share and a third round of investment in 1974 of \$3.88 million priced at \$0.63 per share reflecting a bad situation and a worsening of expectation.

The fact that, in both cases, the investment was staged in three rounds, gave the possibility to venture investors to decide the amount of investment and the price of the shares consequently to the performance shown by the companies allowing to earn a fair rate of return. It is for this reason that Sahlman (1990) described the staged investing as the most important control mechanism of Venture capital.

Staging investment moreover also provide the right to abandon an investment project at early stages if the prospects look dim and provide incentive for the entrepreneurial team (Sahlman, 1990). The entrepreneur in fact will not have all the funds he needs from the very beginning; he knows that he needs to achieve some agreed milestones in term of performance to receive other funding, so he is inclined to behave well and not to waste money. Consequently, to this fact and as empirically demonstrated by Gompers (1995), companies that turn out to be more successful and that go public are the ones that progressively reach all of the agreed milestones and that receive a higher number of financing rounds with respects to other firms less successful that are acquired or go bankrupt.

Another reason in favour of staged financing is that if the entrepreneur would have all the funds at the beginning in a lump-sum investment he would have a hold-up bargaining power over the investor (Neher, 1999). Neher propose a situation in which the entrepreneur repudiate the contract, exit the venture and repudiate the investor claim. Upon repudiation of the investor claim by the entrepreneur, the investor will receive only the physical assets, however, these assets have little value without the entrepreneurs and his ideas. In this kind of situation, affirm Neher (1999):

*the entrepreneur retains bargaining power in the subsequent negotiations over claims to the venture's return (earned if the entrepreneur returns to work). The resolution of the bargaining may leave the investor with a much diminished claim; hence it is in this sense that the entrepreneur can "hold-up" the investor after the investor has made her investment.*

By using staging investment this problem alleviates. Over the life of the venture, the human capital value of the venture gradually moves to the physical assets that are the investor's collateral. Staged investments, if they are small enough, can save the investor from hold-up and the collateral growing value can support later round of investment keeping the investor protected (Neher, 1999).

Small and frequent investment, moreover, force the venture capitalist to monitor the entrepreneur's progress more frequently putting the owner on a "tight leash" and reducing potential losses from bad decisions (Gompers, 1995). This behaviour is more important when it comes to early staged investments, low asset tangibility and high R&D intensity (Gompers, 1995).

### **1.5.3 Syndicated investments**

Syndicated investments refer to investments made in collaboration with other investors both IVC and other CVC. It is a practice that is highly utilized between CVC, in fact, the great majority (four out of five) of corporate investors syndicate at least some of their investments with other incumbents (Anokhin et al, 2011). For this reason, talking about CVC, it is important to understand the motivations and the implication of this investment practice.

Among the motivations for syndication there is the fact that it leads to a superior selection of investments (Lerner, 1994). Investing with others means that more investors are willing to make the same investment and it creates a sort of reciprocal approval. Venture capitalist prefers to syndicate deals because doing so, they have the possibility to check out their own thinking against other knowledgeable sources, and doing so, the cumulative expertise is higher (Lerner, 1994). Venture capitalists must pay attention to whom they decide as partner because it should be a trustworthy and experienced investor. This strategy, however, refer particularly to first stage investments that are riskier. As found by Lerner (1994), in fact, it is important in early stage investments that the venture capitalist find investors with a similar level of experience while in later stage when the risk is lower and investors are less concerned about confirming their judgment, venture capitalist syndicate investments also with less experienced capital providers. Another reason is the risk avoidance through risk sharing because by coinvesting in many syndicated investments the corporate venturer differentiates its holdings (Lerner, 1994). Syndicated investments then give the advantage to establishing a central position in the VC networks that is fundamental to the access to high-quality deal flows (Keil et al., 2008 in Hill et al, 2009). Being part of a network increase the probability of being informed of interesting investments by other IVC and the strict collaboration in syndicates can facilitate the learning process of the CVC in this sector.

Deciding whether and how to syndicate and investment, CVC have to pay attention to the characteristic of the new venture. While in certain circumstances IVC and CVC collaborate to make an investment, in others they compete to giving funds to a start-up. In particular if the new venture offers products or services that are substitute to the ones of the corporate, the

entrepreneur would prefer to being financed by Independent Ventures, while if the new venture is a complement, the entrepreneur would prefer a corporate investor (Hellman, 2002). A complementary venture is interested more in the strategic help of the corporate than the merely financing of the IVC while a substitute venture is scared by the corporate investment and prefer an independent venture financing. However, the entrepreneur does not always choose the investor from whom extract the highest valuation and, in this case, especially when the new venture is a substitute that poses a large threat on the corporate investor's assets, there can be a syndicated financing with the venture capital as the lead investor, supporting the venture and holding a board seat and the corporate acting as a passive investor (Hellman, 2002). The only role that plays the corporate in this situation is to hold equity to reduce the venture capital support to the new venture and to avoid, in case of the success of the venture an excessive cannibalization of its assets (Hellman, 2002). At the end, if the two types of investors, CVC and IVC are both interested in the start-up, they can make syndicated investments with both holding board seats and/or other control rights (Hellman, 2002).

## CHAPTER 2: VALUE CREATION AND COMPARISONS

### 2.1. Value creation for CVC parent

Companies that grow and earn a return on invested capital higher than their cost of capital create value. This is the guiding principle of value creation, articulated in 1890 by Alfred Marshall (cited in Koller et al, 2010) and still valid. To earn and sustain a high ROIC, it is necessary to reach a competitive advantage, that is an advantage over other companies derived by selling at a price premium or by having cost and capital efficiency. The competitive advantage, however, is difficult to maintain because competition tend to erode it. To overcome this problem, companies should continually seek to innovate for creating new sources of competitive advantage that allow to grow and sustain an attractive return in the long-term.

Those are the essentials of value creation, however, to fully understand it, it is important to deepen how the intrinsic value of a company is calculated and how growth, ROIC and cost of capital are positioned within the key value driver formula. In explaining how to derive this formula, I'm using the framework proposed by Koller et al. (2010).

We can begin by saying that the intrinsic value of a company is the discounted value of all its future Cash Flows. If we assume that the Free Cash Flows (FCF) grow at a constant rate ( $g$ ), we can derive the value of the company by using the cash flow perpetuity formula (using the Weighted Average Cost of Capital as discount rate).

$$Value = \frac{FCF}{WACC - g}$$

Free cash flows are calculated as: the profit generated by the company's core operations after subtracting the income taxes related to core operations (Net Operating Profit Less Adjusted Taxes) minus the net investment of the year. In other words, it is the amount of cash that the firm generated from its operations minus the amount of cash that it reinvested into its operations.

$$FCF = NOPLAT - Net Investment$$

The portion of NOPLAT reinvested in the business is represented by the Investment Rate (IR). Solving the formula for Net investment and then substituting it in the FCF formula it gives:

$$IR = \frac{Net Investment}{NOPLAT}$$

$$Net Investment = NOPLAT * IR$$

$$FCF = NOPLAT * (1 - IR)$$

The ROIC is the return that companies earn on the invested capital. It is a good measure of the profit generated for each dollar invested in firm's operations.

$$ROIC = \frac{NOPLAT}{Invested\ Capital}$$

Since the portion of capital reinvested is the IR and the return on that capital invested is the ROIC, the organic growth of the company will be:

$$g = ROIC * IR$$

Solving for IR, then inserting the result in the FCF equation and then in the FCF perpetuity formula we find:

$$IR = \frac{g}{ROIC}$$

$$FCF = NOPLAT \left(1 - \frac{g}{ROIC}\right)$$

$$Value = \frac{NOPLAT \left(1 - \frac{g}{ROIC}\right)}{WACC - g}$$

The latter is the key value driver formula, a sort of evolution of the simple DFC approach to valuation that help to highlight what are the drivers of value. However, this formula is not very used in practice because the model is quite restrictive assuming constant ROIC and constant growth rate.

There are many other ways to value a company and they can be used simultaneously as comparison meters or to check if the others valuation framework used are done properly. There is the multiple method which requires to calculate the ratio of enterprise value on a relevant metric such as earnings or invested capital for comparable companies and apply that multiple to the company object of valuation. There is the Real Options method that is based on the assessment of the value of a "replicating portfolio" that trade securities that replicate the cash flows of the company.

Finally, there is the DCF model, the favourite valuation method for practitioners and academics. The DCF model relies on the forecast of the free cash flow; very detailed in the short run when it's necessary to forecast every financial statement line item, quite detailed in the medium term (five to ten years) focusing just on the company's key value drivers and finding at the end the terminal value through a continuing value formula. The key value driver formula presented above can be used for estimating the continuing value by using a forecast of the NOPLAT in the year following the end of the explicit forecast period.

The DCF is a very useful method especially when the streams of cash flow are predetermined or are easy to quantify and forecast, however, when the investment is particularly uncertain and depends on various and sequential alternative plans it is better to use other methods to combine

them with the traditional DCF. Vassolo and colleagues (2004) affirmed that when making exploratory investments that are partially sunk or irreversible and that involve considerable uncertainty, the real option method accounts more accurately for the valuation of flexibility compared to traditional valuation methods like DCF. Koller (2010) specifies that it is not the uncertainty that prevent the use of DCF for valuation, but it is the managerial flexibility. The DCF method can be combined with either different scenarios or a stochastic simulation permitting to evaluate companies whatever the degree of uncertainty. The managerial flexibility in contrast requires other types of valuation methods that consider the choices managers may make between alternative plans in response to events. A classic example is a manager who planned to stage investments in startups and at each stage should decide whether to proceed considering the information arising at each stage.

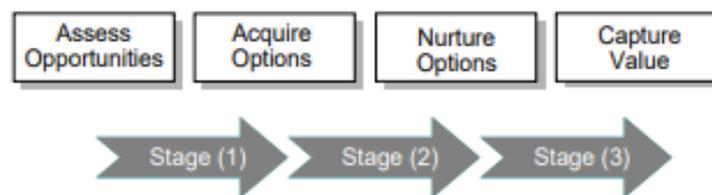
*Where managers expect to respond flexibly to events, they need so-called contingent valuation approaches, which forecast, implicitly or explicitly, the future free cash flows, depending on the future states of the world and management decisions, and then discount these to today's value. (Koller et al, 2010)*

One of these contingent valuation approaches is the real option approach. The real option theory dates back to the period of the discovery of the modern stock option valuation formula of Black and Sholes (Yang, 2006) and the name “real option” refers to the fact that they are typically based on real asset both tangibles and intangibles. As a financial option, a real option gives the right, but not the obligation, to buy or sell an underlying real asset at some point in the future, but differently from financial options they are not a contract with clear rules and price, real options must be identified and their market value assessed (Kulatilaka, Venkatraman, 2001). Under the real option theory, the value of the investment is the sum of its net present value (NPV) and the value of the option. The total value of an uncertain investment is typically undervalued under the DCF method, while the Real option theory provide an important new framework of valuation (Yang, 2006). CVC's investments can be considered options since the investment in startup gives the parent the possibility to sell their stakes and exercise the option when the value of the investment is higher and as already mentioned the option can be exercised also to acquire the new venture. The real assets underlying grow options in the case of CVC could be, therefore, the entry into new markets, new knowledge or new technologies (Yang et al, 2014).

For this reason, CVC investment theoretically should be evaluated with the real option method to better understand the value creation process and to decide if the investment should be undertaken or not. However, it is quite difficult in practice because of the difficulties in finding the right parameters of valuation, so other methods are used like the aforementioned DCF. Nevertheless, while real option is not very used in practice, it is extremely useful to keep in mind that the value creation for the CVC parent is the sum of all the decision taken by the management, so each one should be well thought and nurtured.

For Kulatilaka and Venkatraman (2001) there are four activities that have to take place to fully exploit the value of the option: the assessment of opportunities, the acquisition of the option, the nurture of the option and the capture of the value. (Figure 8)

Figure 8 - Strategic options navigator



Source: Kulatilaka, Venkatraman, 2001

The first part that lead the CVC parent company to create value is to screen the market to assess opportunities. It is a very important part of the process because having the right ventures in portfolio is crucial for the company to create value. For the authors, companies should no more look just at opportunities within their narrowly-defined industries or in related areas, in contrast they should look at a broader array of possibilities and acquire an appropriate set of options to enable to win in the uncertain digital arena.

The second stage is referred to the acquisition and the nurturing of the option. Differently from financial options, real options must be periodically re-evaluated. The market conditions change rapidly, and it is probable that the opportunities need to be reassessed, so it may be needed an additional investment in a portfolio firm to increment the stake or it may be needed an investment in an option of a different nature to respond to new sources of uncertainty.

The third stage is the capture of value. It is useless to acquire and nurture an option if, at the end, the value embedded in the investment is not successfully captured. CVC's parent has to exploit as much as they can the investment made by the fund. Kulatilaka and Venkatraman (2001) affirm that there are three actions that a firm can undertake that are linked to the creation of valuable capabilities. The first is the *follow-on investments* that is the allocation and incorporation of complementary resources necessary to turn an option into a capability and

create value. The second is the *organizational willingness to abandon projects* that refers to the discipline to abandon projects that might not provide benefits for the company. The third is the introduction of *complementary initiatives* to adapt to rapidly changing conditions especially at the cusp of shifting to new forms of assets, digital and intangible.

These actions are essential to nurture the options in a way to extract value, however, to completely capture it, is essential to exercise the option at the right time and at the right price. Acting at the right time requires the develop of an organizational capability to forecast the right value of exercising the options at different time periods and under different conditions. Assess the right exercise price allows to gain a financial return and is the last step of the value creation process for the CVC parent.

### **2.1.1. Creation of portfolio**

The first part of the process above described require the screening of the market to assess opportunities. Complementary to this practice there is the creation of the portfolio. For a CVC fund, to create value, not only is it important to find the right company in which invest, it is important to find the right company in which invest based on the other companies already in the portfolio. It is necessary to look at the configuration feature of CVI portfolio to understand its performance impact because neither an analysis of each individual venture in the portfolio nor the examination of the portfolio magnitude are sufficient to show the full value of the strategic benefits of CVC investment for the parent (Lin, Lee, 2011). The real option valuation method is also affected in this sense because it has to shift from a single to a multiple real option framework. When the investments in CVC portfolio are more than one, they should not be evaluated in isolation because they may interact with each other and the correlations among their outcomes can lead to subadditivity or super-additivity in the value of the portfolio (Vassolo et al, 2004).

When deciding the configuration of the portfolio there are two question that arise: one is “how many companies should there be in the portfolio?” and the other is “How much should it be diversified?”.

To answer at the first question, Biggadike's study (1979) suggested that firms should invest in a few projects at time so that each can have the advantage of adequate resources, however, other studies like the one of Lin and Lee (2011) show opposite results. Lin and Lee show that Investment Overlap defined by them as “the degree to which resources are spread over multiple ventures within a narrowly defined segment” is not negative for future growth opportunities and explain this discrepancy with the different goals presumed. Biggadike (1979) in his study

is not studying corporate venture investments but simply the investments inside of the companies and propose as a goal the market share and the financial returns, Lin and Lee (2011) instead propose as a goal the learning and future growth and their study is focused on corporate venture capital. We can so conclude that the number of projects in which invest can vary and depend on the resources' availability and on the goal of the investment. For CVC, if there are sufficient resources available, it is not a problem to invest in many firms resulting in an Investment Overlap because it is still beneficial for the goals of the fund.

Regarding the second question, the theory about the diversification of the portfolio to reduce risk and create value, has been studied by many authors but only a few studies investigated the portfolio diversification in CVC perspective.

Diversification is a technique to reduce the risk by investing in numerous and different projects. Diversifying the investment permits to eliminate the unsystematic risk that is the risk specific to a company, industry, market, or country, so that the investment is at risk only for the systematic risk that is undiversifiable.

Palich and colleagues (2000) go deeper into the topic of diversification inside of companies and find that related diversification is better than unrelated diversification. Companies that diversify but in a related way "can convert underutilized assets and achieve economies of scope by sharing resources and combining activities along the value chain" (Palich et al, 2000), however, beyond a certain point of relatedness the costs of increased diversification outweigh the benefits, giving an inverted U-shaped model.

Yang and Colleagues, in a study of 2014, tried to investigate how the diversification and relatedness mentioned by Palich and colleagues (2000), influenced the CVC portfolio value. They found that the CVC program that create the most value consist of a portfolio of companies with little industry diversification and moderately related to the corporate investor. The reasoning is that a focused program permits more in-depth learning, however, they point out that if the portfolio is closely related to the CVC parent, the learning potential is low, and it can cause the CVC program to be just a complement to in-house R&D.

The authors assert that there is a need to be careful in applying theory based on companies, like Palich's theory, to corporate venture capital programs. CVC, in fact, is seen as a strategic tool to open a window on new technologies and markets that may be far from the core business of the CVC parent (Yang et al, 2014), so a related diversification could not be the sole path in this case. A small diversification in sectors related to the one of the CVC's parent can intensify the learning processes but at the detriment of variety of innovations ideas. CVC's portfolio diversification is implemented more to have a broader base of new ideas than to reduce risk, this needs to be considered.

At support of this thesis, other authors found different results regarding the differentiation of portfolios in CVC programs. Lin and Lee (2011) in fact, found that increasing within-portfolio diversity can enhance the investing firm's growth value. The authors did not ignore the potential downsides of diversification strategies, like the possibility of unfruitful investments and the difficulties in learning due to limited organizational attention and absorptive capability but points out that the inefficiencies in the short run are overcome by long-term strategic benefit in return.

Finally, in a more recent study, Yang and colleagues (2016) investigated the subject of diversification again and in more detail with other colleagues, and they found that the portfolio diversification of CVC depends on the structural characteristic of the program and upon these variables depend the CVC parent's growth potential. If the CVC program is autonomous and the CVC managers' attention is not attuned to that of the parent, the portfolio of the CVC will be more diversified and the relationship between CVC portfolio diversification and the parent corporate's growth potentials will be positive.

In a more autonomous program, CVC managers will differentiate more because they are less attached to the parent and so they are more likely to pay attention to technologies/markets outside the parent's business domains (Yang et al., 2016). Besides, we can interpret that more autonomy in CVC program is correlated to less related investment in the portfolio bringing us back to the thesis that an unrelated diversification in CVC programs is beneficial for obtaining innovative ideas and open a window on new technologies and markets. A moderate relatedness of the investment and a littler industry diversification, however, help with the learning process and facilitate in the selection of the target. The final decision should be made considering the trade-off and the result you are trying to obtain with the investment, taking into consideration that relatedness and diversification are vague and nuanced concepts especially in the current economy in which some sectors such as technology join others such as finance (Fintech) biology (Biotech), insurance (insurtech), education (edtech).

### **2.1.2. Open Innovation**

Innovation is identified as one of the most important elements that contribute to the growth and maintenance of a competitive advantage and consequently to the creation of value (Herskovits et al, 2013). It is therefore essential to talk about how business innovation is influenced by CVC, since this is one of the most used tools of the new paradigm Open Innovation.

The term Open Innovation was coined by Henry Chesbrough in his book "Open Innovation: The New Imperative for Creating and Profiting from Technology" published on Harvard

Business School Press in 2003. In the book the author asserts that whether the closed innovation paradigm, that is the research done within the confine of the company, fits well with the knowledge environment of the early 20th century, as it leads to many important achievements and many commercial successes, it is increasingly at odds with the knowledge landscape at the beginning of the 21st century. For this reason, he reflects about the fact that it is time to overcome the old Closed Innovation paradigm, to replace it with the newest Open Innovation paradigm that is more effective, less costly and less risky.

Open Innovation is defined as “the use of purposive inflows and outflows of knowledge to accelerate internal innovation, and expand the markets for external use of innovation, respectively” (Chesbrough et al., 2006). It means that:

*Companies should make much greater use of external ideas and the technologies in their own business, while letting their unused ideas be used by other companies. This requires each company to open up its business model to let more external ideas and technology flow in from the outside and let the more internal knowledge flow to the outside (Chesbrough et al., 2006).*

It is very difficult, in a fast-changing world, to grow all the innovation you need from within. The R&D activities alone, even the ones of large firms, cannot notice all the novelties which may influence their businesses, or which may create new opportunities. Companies therefore have to adapt their business model to make them more open to the extern. Opening to the outside permits to gain a potential for identifying and creating more value for the company while at the same time enabling others to the same (Chesbrough et al., 2006). From one side, in an Open Innovation system, a company whose project is expected not to be profitable enough will try to license or sell it to other firms that can use it in a better way to extract more value from it. From the other side, companies will have the possibility to search for innovation in a much wider range of technologies and market opportunities instead of creating it internally, resulting in a portfolio of projects diversified, uncorrelated and more resistant to problems (Vanhaverbeke et al, 2008).

Open innovation programs can be implemented through a series of different instruments that do not compete between themselves but instead they are complementary, and they leverage each other (Herskovits et al, 2013). Among these instruments there are customer inputs, crowd-sourcing, open-source projects, patent acquisition, external insights, supplier integration, joint-development projects, and finally, one of the major organizational vehicles to apply Open Innovation: corporate venture capital (Muller et al, 2012; Vanhaverbeke et al, 2008). The role

of CVC comes to the aid of Open Innovation as a mean to explore alternative ideas in small start-up companies and, whether it is utilized to maintain a control over a spin off company, it can serve also to commercialize technologies and ideas outside.

The CVC activity and the Open Innovation in general can be viewed also as a way to learn and gain knowledge. The capacity of a firm to form knowledge networks inside and outside of the firm's boundaries is a valuable capability for an innovating firm that aims at creating new and difficult to imitate competitive advantage (Livieratos, Lepeniotis, 2017). From the knowledge-based perspective, in fact, knowledge is a source of sustainable competitive advantage, and it is particularly important for innovation-driven corporates and technology-based ventures that needs a continuous regeneration of knowledge (Lane and Lubatkin, 1998; Weber and Weber, 2007). The accumulation of knowledge is a driving force in the growth of firms because it opens up new opportunities and enhance the firm's ability to exploit them (Maula, 2001) and CVC is the best tool that allows firms to implement this accumulation of knowledge, also in the long run, in the context of Open Innovation.

### **2.1.3. Exploration/Exploitation**

CVC is used not only to explore new sources of innovation, but also to exploit existing resources and to benefit from possible synergies and complementarities with start-up companies (Chesbrough, 2002; Duschnitzky and Lenox, 2005). There is a theory of which March's contribution (1991) stands out for its importance that assert that for a firm survival and prosperity, an appropriate balance between exploration and exploitation strategies is needed.

Exploration is defined by some terms such as search, variation, risk taking, experimentation, play, flexibility, discovery, innovation (March, 1991), and the knowledge it creates is often distant from the existing knowledge base of the firm (Schildt et al, 2005). Exploitation includes terms such as refinement, choice, production, efficiency, selection, implementation, execution (March, 1991), and the knowledge used in this case is closely related to their pre-existing knowledge bases (Schildt et al, 2005). Whether there is consensus about the definition of exploration, there is not consensus about the definition of exploitation that is referred by some scholars as the solely use of past knowledge and by some others as the pursuit and acquisition of new knowledge, albeit of a kind different from that associated with exploration (Gupta et al, 2006). A better definition of exploitation would be needed to build a more informative and more complete body of research.

Engaging in both the practices of exploration and exploitation is essential to create durable value. Engaging in exploration and not in exploitation would lead the company to suffer the

costs of experimentation without gaining its benefits. There would be plenty of ideas but no competence to develop them. At the same time, engaging in exploitation at the expenses of exploration would lead to be trapped in a suboptimal stable equilibrium that may vanish with changing external conditions. However, it is very difficult to concentrate in the two practices in the same way and at the same time. First it is a matter of resources because their scarcity requires a choice by the company between the two (March, 1991). Second, it is very difficult to engage in both exploration and exploitation together since they require a structure, incentives and culture that are completely different from those required by the others (Jeon, 2017). Some solution proposed by the literature involve the use of temporal separation or structural separation (Gibson and Birkinshaw, 2004). The temporal separation implies that an entire unit focuses on one task in some days while focusing on another task another day. The structural separation instead implies that different units of the firms focus on a specific task.

Despite all the solutions proposed, achieving the pursuing of exploration and exploitation at the same time and in the same business unit, even if difficult, is possible and it is called ambidexterity. Ambidexterity is more in general defined in the organizational literature, as doing “two disparate things at the same time” (Gibson and Birkinshaw, 2004), in this case exploitation and exploration simultaneously.

Although there is consensus on the need to find a balance between exploration and exploitation, the best way to achieve it has not yet been identified, but there are two main contenders that are the ambidexterity just mentioned and the temporal separation mentioned above, defined by Gupta and colleagues (2006) as “punctuated equilibrium”.

Among the principal supporters for ambidexterity, there are Gibson and Birkinshaw (2004) that assert “achieving ambidexterity through contextual support is possible and does relate positively to performance” however they refer to ambidexterity not specifically referred to exploration and exploitation. Referred to exploration and exploitation, Benner and Tushman (2003) analyse the ambidexterity and its limitations highlighting the need for physically and culturally separated units by affirming:

*Ambidextrous organizational designs are composed of highly differentiated but weakly integrated subunits. While the exploratory units are small and decentralized, with loose cultures and processes, the exploitation units are larger and more centralized, with tight cultures and processes. [...] Because process management tends to drive out experimentation, it must be prevented from migrating into exploratory units and processes. In contrast, exploitation units that succeed by reducing variability and maximizing efficiency and*

*control are an ideal location for the tight coordination associated with process management efforts.*

Their findings seem to suggest us the use of structural separation instead of pure ambidexterity, however, their study is not referred to CVC activity but more in general to organizational design. A demonstration of ambidexterity in the context of CVC comes from Hill and Birkingshaw (2006) who found that the higher performance was from the CVC funds that utilize ambidexterity so they suggest that “the dominant focus on corporate venture units as vehicles of exploration may need to be replaced by a more nuanced conceptualisation of these units as constituted by dualistic interplays of exploration and exploitation.”

The other alternative is the temporal separation. Jeon (2017) argues that there are two hypotheses supporting the temporal separation, one is that the today’s exploitation can produce resources that can be used for tomorrow exploration and the other is that today’s exploration can produce new technologies that may be needed for tomorrow’s exploitation. In favour of the sequential allocation of resources first in one project and then in another, there are also Levinthal and March (1993) that affirm it would lead to a simplification and Burgelman (2002). The latter ask himself “Does optimal long-run adaptation follow a punctuated equilibrium pattern, perhaps involving a series of discrete periods, each focused on maximally exploiting the available opportunities, rather than a more continuous evolutionary process of balancing exploitation of available opportunities at a given time with preparing the ground for future growth opportunities?” and tries to answer preferring temporal separation since ambidexterity between exploration and exploitation would involve difficulties as pointed out by March (1991).

CVC can come in the aid of the company by offering a platform in which the company can engage in the exploration while concentrate in exploitation in another part of the company, so physically and culturally separating them, as suggested by Benner and Tushman (2003). Alternatively, CVC can pursue both exploration and exploitation by interchanging the portfolio of companies over time, so applying temporal separation, or by pursuing a dualistic interplay of both using the same portfolio, as suggested by Hill and Birkingshaw (2006).

## 2.2. Value creation for new venture

It is important to recognize that the value created by the CVC fund is not limited to the CVC parent, but it also affects the new venture (Napp, Minshall, 2011). We have seen that the CVC

parent gain value with a configuration of its portfolio that permit to exploit owned resources and to explore new ones through Open Innovation.

The biggest source of value for a start-up is the entrepreneur's innovative idea or a new technology that may or may not be patent covered. This idea or new technology may be valuable and difficult to imitate giving thus the entrepreneur a sustainable competitive advantage. However, resources that may be critical for achieving a competitive advantage may extend beyond firm boundaries and may be embedded in interfirm routines and processes (Dyer, Singh, 1998). Networks of firms can develop relationships and create new value by combining, exchanging, or investing in idiosyncratic assets, knowledge, resources, and capabilities, that result in a sustained competitive advantage (Dyer, Singh, 1998). Other benefits that the entrepreneurial firm gain with the networking with a big firm are reassumed in Table 3.

*Table 3 - Benefit to entrepreneurial venture from CVC-backing*

Activity	Benefits
Financing	<ul style="list-style-type: none"> <li>• Access financial resources-equity, royalties, R&amp;D funding, etc.</li> <li>• Reduce cost</li> </ul>
R&D/ New product development	<ul style="list-style-type: none"> <li>• Utilize market intelligence</li> <li>• Access to extensive publications library</li> <li>• Obtain technological insights</li> <li>• Leverage core competences</li> <li>• Access complementary technologies</li> <li>• Access to labs and test facilities</li> </ul>
Manufacturing	<ul style="list-style-type: none"> <li>• Receive manufacturing knowledge and capabilities</li> <li>• Capitalize on component purchasing power</li> <li>• Access quality assurance capabilities</li> </ul>
Marketing/Distribution	<ul style="list-style-type: none"> <li>• Improve market access (distribution channels, global networks)</li> <li>• Access and established and loyal customer base</li> <li>• Acquire market research and personal insights</li> <li>• Reduce cycle time</li> <li>• Increase credibility</li> <li>• Ties to a partner capable of driving industry standards</li> </ul>
Legal/Regulatory	<ul style="list-style-type: none"> <li>• Advice on regulatory or patent approvals</li> </ul>
Service/Support	<ul style="list-style-type: none"> <li>• Establish warranty, service and customer support procedures</li> </ul>
Reputation	<ul style="list-style-type: none"> <li>• Exploit “halo effect” that comes from large company’s endorsement</li> </ul>

*Source: Kelly et al. (2000)*

Although in creating this list Kelly et al. (2000) were analysing alliances between large and small firms, the same concept can apply to the equity relationship that corporate venture capital creates with entrepreneurial ventures. The new ventures in which the CVC invest, in fact, can leverage their own technology and create value by gaining access to markets or complementary knowledge of the investor, by receiving management advice and operational support by the investor which is assumed to have significant expertise and can gain value via the credibility attached to the CVC parent (Napp, Minshall, 2011). Maula (2001) argue that the value-added

mechanism for technology-based new firms can be categorized in three forms, that are hypothesized to account for most of the value added received by portfolio companies from CVC investors, and then develops a model and hypothesis on the factors influencing them.

The three forms of value-added for Maula (2001) are:

1. Resource acquisition: refers to the start-up gaining access to the resources of the CVC parent through the investment relationship.
2. Knowledge acquisition: refers to the learning benefit gained from the relationship with an experienced corporation.
3. Endorsement: refers to the external legitimization the start-up will receive through the association to the big corporation.

### **2.2.1. Resource acquisition**

The resource acquisition is argued to be a critical factor for technology-based new ventures because these ventures, are highly dependent on their external environment for acquiring resources (Maula, 2001). Through equity funding from CVC, new venture may gain the access to complementary assets of the investor like manufacturing, legal, sales, distribution, and customer service activities that for start-up are difficult to develop internally due to prohibitive cost and time constraint. (Park, Steensma, 2012).

Maula (2001) argues that there are two main types of resources that the ventures aspire to have access to: resources related to distribution and resources related to production. Start-up companies are very good in developing new technologies, solutions and ideas but is more difficult for them to have relevant and capillary distribution chain. They can therefore search for help in big global firms with a developed distribution channel spanning several markets (Maula, 2001). At the same way it can be difficult for new ventures to put the products they developed in large-scale production (Teece, 1986). Moreover, it can happen that a new venture may need complementary resources or technologies that the big corporation possess, or it can happen that an input of the production needed by the entrepreneur is produced by the big corporation. In these cases, a preferential access for the complementary technologies or a lower price for the inputs needed by the entrepreneur can be valuable for the new firm (Maula, 2001). Especially when the resources needed are specialized complementary assets, it may be more effectively for the entrepreneur to obtain them from established firms that have an equity stake in the new venture (Park, Steensma, 2012). The reason is that specialized resources require investments by the CVC parent that would lose value if the new venture would leave the relationship so, an equity ownership that gives control rights that can be exercised in case the

partner behave opportunistically, is a safeguard for the CVC (Park, Steensma, 2012). At the same time, the equity relationship permits to the new venture to gain specific resources that would have needed excessive contractual stipulations, penalty clauses, monitoring mechanisms and consequently, costs, if acquired in a normal arm's-length market relationship (Park, Steensma, 2012)

### **2.2.2. Knowledge acquisition**

Networks are vital to the discovery of opportunities and in providing information benefits (Lee, et al., 2001). As large corporations invest in small technological new ventures to learn from them and get new ideas, new ventures also can gain some type of knowledge from big firms. Learning, in fact, in some cases can come from networks of external relationships. Urban and Von Hippel (1988), for example, found out that in many of the cases in the sample of firms they studied, the innovation did not come from the inside but from outside relationships. They found that users were the developers of the 77% of the innovations in the field of scientific instruments. In the manufacturing of wire termination machinery, instead, they found that the innovation that did not involve attaching a connector to a wire came from the inside, while the innovative machines that attach connectors as part of their function were developed by major connector suppliers.

Apart from users and suppliers the innovation can come also from other firms, especially if they possess a different knowledge base like small start-up companies and big corporations.

Young corporation are typically focused on a specific area of expertise, they began from an innovative idea and develop a business on that idea, so they are expert in what concern that particular area or sector. Large corporation instead can possess knowledge of a different kind and of a broader view.

For example, large corporations spend a lot of time, money, and resources to make market research and to identify the markets needs and preferences. (Maula, 2001) This type of knowledge may be valuable for a start-up to decide in which market it is advisable to concentrate or to make small changes to their product to make it more appealing to a larger group of people. Large corporations, moreover, have more information about the competitors or about the new technologies that other start-up companies are developing because they put large resources into competitive intelligence. (Maula, 2001). Large corporations' knowledge can come from market research, from experience in the field or from the due diligence process made with other potential candidates for funding. It can be useful to start-up companies that usually concentrate just in their project, to have information about other competitor, especially

if some other new venture is developing a similar technology, and the fastest way to gain this type of information is by taking advantage of a possible equity financing from a CVC sustained by a big corporation.

Finally, big corporations can provide more general knowledge like advices on production, distribution or legal problems that comes from a big experience that a new venture does not have.

### **2.2.3. Endorsement**

Start-ups are new firms, they offer products or services that are new (with various degree), they are quite risky, and they are not known by market. For these reasons, the market does not know if it can trust the products of the start-up and if it is convenient and sure to buy from the new venture. The endorsement given by the assistance of a big corporation, by being the first to bet in the firm investing in her and buying its products, can help the start up in this situation. The endorsement, in this context, is the positive effect on the reputation and performance of a new venture given by its association with a big and prestigious company. Stuart (2000) study the endorsement effect in alliances and found confirm that firms with an alliance with a large partner perform better than comparable firms that lack such partners. He affirms that:

*Particularly when one of the firms in an alliance is a young or small organization or, more generally, an organization of equivocal quality, alliances can act as endorsements: they build public confidence in the value of an organization's products and services and thereby facilitate the firm's efforts to attract customers and other corporate partners.*

This is true for alliances, but it may work in the same way also for CVC. One of the most representative examples of the effect of endorsement through CVC is Linux. Linux was a start-up that stood as an alternative to the more famous Microsoft operating system but at the beginning was not very known and trusted by the market. Through the investment by some big companies like Intel, Dell, IBM, and Compaq, the startup Linux improved its perception as a valid technology on which reliable multibillion-dollar companies were going to build products (Maula, 2001; 2007).

### 2.3. CVC vs IVC

For startup companies, receiving funding by Independent Venture Capital (IVC) or by CVC may seem quite the same thing but, it is not. IVC and CVC have similar names but are very different both in their objectives, structure, incentive scheme, time horizon, capital invested and, in their resources and capabilities that directly affect the value added for the new ventures. IVC is defined as “a professionally managed pool of money raised for the sole purpose of making intermediate-term, actively managed, direct equity investments in rapidly growing private companies, with a well-defined exit strategy—preferably through an initial public offering.” (Megginson, 2004).

Regarding the structure, IVC, similarly to other form of private equity, are organized in limited partnership in which there are two different types of partner: General partners and Limited partners. General partners that are also called managing partners, act like professionals and are responsible for the day to day management. They raise funds, identify investment opportunities, set up the deals, manage the investment portfolio and the relations with investors. For their work they receive an annual management fee and an incentive fee when the fund overperform and make an excess profit. Limited partners are not responsible for the day to day management, they are the ones that put up the capital and waits for eventual profits. Limited partners in IVC are usually wealthy individuals, pension funds, university endowments and other institutional investors.

The investments of IVC funds are usually in high-risk and potentially high-reward start-up companies that are characterized by significant intangible assets and by years of negative earnings that makes it impossible for those firms to receive bank loans or others bank financing (Gompers, Lerner, 1999). The exit strategy is well defined because the investment has a merely financial objective; to provide a capital gain to limited partners.

IVC buys an equity stake in a start-up and contribute not only with money but also with managerial support to assure a growth of the firm with the ultimate goal of sell it at a higher price or make the firm go public with an IPO and earn from the sales of ownership stakes.

The main purpose is therefore to achieve the maximum possible Internal Rate of Return and/or Cash on Cash Return.

On the contrary, in CVC the primary objective is not only financial and the financial gains from the operation, sometimes, are just the direct consequence of a good strategic choice.

It is clear that a financial return that cover at least the expenses for the investment is always expected, however, if the financial return were poor, it may be offset by strategic benefits and

this could justify corporate venture capital investment (Dushnitsky, Lenox, 2006). To say it with other words, sometime short term financial returns could be sacrificed if the investment is considered strategically good enough to permit to create a higher value in the long term. The strategic objectives of CVC as already mentioned can be divided in three main categories that are: learning objectives, option building objectives, leveraging objectives (Maula, 2007). It is argued that it is precisely the strategic objectives of CVC to legitimate this practice because if the returns were just financial the parent company or its shareholders, could have directly invested in other VC funds, pension funds or other more rewarding and less risky instruments (Yang, 2006).

The structure of IVC funds is considered to be suitable to mitigate potential principal-agents' conflicts (Fenn et al, 1995) and has been identified as critical to VC success, especially its reliance on limited partnership of finite life and with substantial profit sharing (Gompers, Lerner, 2000).

The limited partnership structure of IVC provide some covenant or some contractual provision that assure a return for limited partners and curbs potential agency behaviours by general partners. For instance, sometimes a return is promised to LP before the GP can get the carried interest and this return is called hurdle return. Some hurdle returns also have a catch-up provision that is a clause that assure the GP a greater share of profits after that priority return is paid (Iannotta, 2010). There can be a clawback provision that protects the LP profits in the case in which the fund begins well and then performs poorly. Since the GP could have taken a profit higher than they should, with this clause, the GP has to give back to the LP all the excess profit (Iannotta, 2010). Moreover, it can be assessed a limit on the amount invested in any firm, a limit in the reinvestment of profits, a limit of co-investments with other funds and a limit on personal investment of GP directly in firms (Yang, 2006).

In CVC funds many of this control systems used to control potential agency behaviour by managers are not utilized. The structure of CVC programs is different among companies. Some companies invest through direct investments, other create a dedicated fund and other invest in external venture capital funds but there is no common practice, every company chose the type of structure it prefers. There is however the idea that the structure of CVC should replicate as much as possible the flexibility and freedom of the IVC models (Chesbrough, 2000; Gompers and Lerner, 2001, cited in Yang et al, 2016). This idea is however not shared by all scholars, since Hill and colleagues (2009) assert that the adoption of the VC model by CVC is associated with higher financial performance but not strategical performance.

Moreover, the remuneration for manager in CVC is different. As already said, in CVC, professionals are rewarded in similar way to managers in other part of the corporations, this

type of compensation is administratively simple and is also perceived as a signal of fairness by the rest of the workers, however it lacks incentives that may align company's and manager's interests (Hill et al, 2009; Yang, 2006). In IVC the remuneration of general partner depends in part on the performance and the profit of the investment, so they are incentivized to act in the best way for the investment. In CVC being the objective strategical more than financial, is it difficult to evaluate the performance and to compensate adequately the managers for it.

Regarding the time horizon, IVC investments have usually a finite life, around 10 years, and then have to raise new funds for other investments. CVC do not have a predetermined exit strategy and their investment time horizon can vary. The limited life of IVC funds influence the managers behaviour because their performance in those years impact on their reputation and on their subsequent ability to raise funds or participate in investment syndicates (Fenn et al, 1995).

In CVC the absence of the reputational effect and the availability of funds by the Corporate parent could make the managers less motivated. Moreover, even if CVC programs could last many years, they usually have a life shorter than IVC. CVC frequently cease operations after a few investments and the main reasons are: the lack of motivations of managers due to inadequate compensation schemes; the lack of a strong strategic focus; the fact that they have to accomplish a series of incompatibles objectives, and the confusion over objectives that lead to dissatisfaction (Gompers and Lerner, 2000).

Other differences between CVC and IVC are in their investments. CVC invest larger amounts while getting smaller equity fractions compared to IVCs, moreover, CVC tend to invest in earlier round in firms that are smaller, younger and more R&D-intensive respect to IVC investments (Chemmanur, Loutskina, 2009).

### **2.3.1. Differences in performance and value-added**

Another difference between CVC and IVC is the availability of different resources and capabilities that impact on the capability to add value to new ventures. Maula and colleagues (2005) propose two kind of different value-adding forms. They assert that there are differences in the social networks of independent and corporate venture capital investors, so “who they know”, and differences in the competence areas of the investors, so “what they know”, and both differences are reflected in the value added. In particular, independent venture capitalist help entrepreneurs by helping in the assessment of the right strategy and by recruiting key employees (Maula et al, 2005). The past experience of IVC advising entrepreneurs, gives them an edge on solving the problems on new ventures and in deciding the best strategy for them.

On the other hand, corporate venture capitalist help entrepreneurs by attracting foreign customers, suppliers, and partners, thanks to their commerce experience and international status, by increasing new venture's credibility and by advising on technology (Maula et al, 2005).

A similar study by Chemmanur and Loutskina (2009) propose other value-creating resources possessed by IVC and CVC. They say that the two types of venture capital have different abilities that can help portfolio firms access the capital markets, and the terms under which they access these markets, on one hand IVC have relationships with top-tier investment banks, institutional investors, and financial analysts that may help, and on the other hand, being backed by a CVC can give more credibility to the market.

Finally, CVC can help entrepreneurs also with their personal resources like distribution channels, sales force and production capacity, things that IVC cannot offer to the companies in which they invest.

Regarding the performance of CVC and IVC there are different studies that report mixed results. Gompers and Lerner (2000) examined a sample of over thirty thousand transactions by corporate and independent venture capital to find if there were differences in the new enterprises' performance, measured using parameters such as the probability of going public, the probability of not being liquidated and the probability of obtaining an acquisition at least twice the post-money valuation at the time of the investment. They found that CVC investment were at least as successful as IVC investment especially when there was a strategic overlap between the CVC parent and the portfolio firm.

The strategic fit is a very important variable for Gompers and Lerner (2000). They found that firms backed by CVC which have a strategic tie, were significantly more likely to have gone public and were less likely to have been liquidated than those financed by other organizations. However only corporate venture investment with a strategic fit performs better than independent venture investment.

The results of Gompers and Lerner (2000) are quite consistent with the finding of already mentioned Park and Steesma study (2012). The idea that a strategic fit was beneficial for new ventures receiving funding from CVC, in fact, was shared also by Park and Steesma (2012) which found that CVC funding was particularly valuable to venture that required specialized complementary assets or operate in uncertain environment while was less beneficial for new ventures that required generic asset and operate in stable environment. The authors moreover found that the CVC funding was positively related to the likelihood of an IPO of the new venture but was also positively related to the likelihood of a failure.

Other scholars analysed more aspects and found different and mixed results, some consistent between them and other not. Chemmanur and Loutskina (2009) found that CVC-backed firms have a higher probability of a successful exit through an IPO or an acquisition compared to IVC backed firms and a higher probability of having an IPO rather than an acquisition. However, they found also that CVC-backed ventures have a lower profitability margin pre and post IPO until year four while by the fifth year their profitability improves and becomes statistically insignificant from that of IVC-backed firms five years post-IPO. CVC backed ventures are more likely to be delisted within three years post IPO respect to IVC backed ventures, consistently with the lower profitability of the CVC portfolio companies in the first four years (Chemmanur and Loutskina, 2008).

Bertoni and colleagues (2013) analysed the impact of IVC and CVC investments on the growth of two indicators, employment and sales, of the venture capitalist's portfolio companies, to see if the firm has successful business which facilitates an IPO. They found that both IVC and CVC investments have a positive effect on the growth rate of new ventures, also in the long term, both in employment and in sales growth even if at different pace. The sales grew very fast in the first year for IVC-backed ventures and in the second years they decelerate, conversely for CVC-backed ventures the sales growth was more gradual. Regarding employment, it grew gradually for CVC portfolio firms while IVC portfolio firms refrained from hiring many employees in the first years.

Colombo and Murtinu (2017) focused on high-tech European ventures and found that being backed by IVC or by CVC have the same impact on the performance of the venture and this positive effect was due mainly to an increase in sales. Similar to Bertoni et al. (2013) the authors found a different pace in the sales growth between CVC and IVC and the reason is that "IVCs are more inclined than CVCs to speed up the time to market, thus leading portfolio firms to the commercialization phase as soon as possible".

Finally, Kim and Park (2017) analysed the influence of CVC funding in innovation rates and probability of going public of ventures in early stage. They found that ventures receiving CVC funding in their first three years tend to innovate more but are less likely to have an IPO, especially in the case in which the startup is managed by a novice entrepreneur.

Then, Kim and Park (2017), aware of the differences between studies on the same topic suggest that the timing of CVC funding may be one potential explanation to reconcile inconsistency findings. Other explanation may be referred to the context of the study (sample of firms in different geographic areas or different sectors) or a different focus on the study.

## 2.4. CVC vs Acquisitions

CVC activity, like other forms of alliances or equity partnerships, can be used by corporates as an alternative to acquisitions or as a prelude to an acquisition.

Rather than acquire a company, which is risky and require a big investment, a firm may invest just a minority equity to benefit from the equity partnership benefits while avoiding acquisition's drawbacks. Schildt and colleagues (2005) affirm that CVC and alliances are the least expensive forms of corporate venturing that thus allow to reduce the investment expenses limiting the risk. Because of that and because of the fact that CVC, alliances and Joint ventures have poorly integrated governance mode, they are likely to be preferred to acquisition as the governance mode when companies conduct risky explorative investments in ventures (Schildt et al, 2005).

Comparing the choice between corporate venturing and acquisitions using a real options approach, Tong and Li (2011) found that for a firm it is more important the flexibility given by CVC investments when there is a high level of market uncertainty. CVC investments, in fact, can be staged and after the first round of investment the investor can decide whether to continue, abandon or defer. For acquisition this process it is not possible, they are a one-shot transaction, and they provide less flexibility to adjust or reverse their actions compared to CVC investments (Tong, Li, 2011). The preference to use CVC investment instead of acquisition in uncertain environment can be amplified or reduced by some factors.

The authors found that when the investment is irreversible, so when its resale price is higher than its cost, the preference towards CVC investments is accentuated. They then focused on the growth opportunities of the new ventures and suggest that delaying or staging an investment in a firm that is growing can bring losses due to the opportunity cost of waiting. The authors Tong and Li (2011) found support that higher growth opportunities attenuate the positive relationship between uncertainty and the preference for CVC over acquisition.

Other authors focused on the CVC investments used as an anticipation to the acquisition. A minority investment gives to the investor the possibility to assess the profitability of the other firm's technology, the compatibility of their culture and the quality of management before acquiring the whole firm or a controlling interest (DePamphilis, 2019). This information's acquisition may be useful for the investor to evaluate and understand if it convenient to invest more and successively to acquire. However, it has to be taken into account that this information benefit last only for the first two years and then dissipate very quickly, probably due to rapid pace of change (Benson, 2010).

CVC overall increases acquisition performance but paradoxically “acquirers perform worse with the subset of acquisitions about which they have the most information (the subset of firms they have directly invested in)” (Benson, 2010). The improved performance acquisition is given, in fact, by the experience of CVC investing, so by an improved ability of the investor to identify entrepreneurial venture as possible targets for acquisitions and not by the information gained through the initial investment (Benson, Ziedonis, 2009). The acquisitions of portfolio companies tend to destroy value for the shareholder of the investor and the reason are principally managerial overconfidence or agency problems at the CVC program level (Benson, 2010).

Accordingly, as already mentioned in Chapter 1, Maula (2000) found that less than 6% of CVC investment in their sample had been followed by an acquisition. This suggest that staging the investment resulting in a final acquisition of a company in which an initial CVC investment is already been made is quite uncommon.

To conclude, as found by Tong and Li (2011), CVC investments are preferred to acquisition in uncertain environment but would probably remain simple minority equity investment and won't transform in acquisitions because it may destroy value (Benson, 2010).

## CHAPTER 3: CASE STUDIES

In this Chapter, it is presented an analysis of eight different Italian CVC initiatives to try to delineate trends, similarities and differences and to identify the characteristics and value creation process explained in the literature of the previous chapters.

The CVC phenomenon in Italy is not yet widespread as in other countries; in 2019 the share of European CVC-backed deals was just 19% globally and of these almost half were from UK and Germany (CBInsights, 2019). Consequently, the literature about CVC lacks insights relative to the Italian scenario that may be quite limited in the magnitude but still important, and the objective of this study is to try to fill this gap by providing insights and guidance for further and more rigorous research. It has been decided to adopt a multiple case study methodology to provide a round picture of the phenomenon and to observe whether some particularities are found in more than one case in order to draw some conclusion.

Each case study will be presented separately, and the structure will be the same for each one. In the first part of the case study, it will be presented a brief presentation of the CVC, the objective of the funds, the eventual integration with other Open Innovation initiatives and the eventual collaboration with other VC funds.

In the second part, the investments of the CVC will be illustrated. The rationale is to understand whether the investments are also strategical or just financial and, to this purpose, it will be explained how some startups were integrated in the business model of the CVC's parent company.

In the last part of each case study will be reported insights, particularities, and some reflection while the more important findings of the cross-analysis of the cases will be discussed at the end in the conclusions.

Data and information for the research was gathered from press releases of the CVC's parent company and press releases of startups, startups websites, company's website or directly the CVC's websites (some CVC has its own website to explain how they invest and what they offer in order to attract the best startups to send their business plans), articles from BeBeez and Il Sole 24 Ore, and data from Crunchbase database and from Pitchbook.

### 3.1. TIM Ventures

Tim Ventures is the CVC fund of Telecom Italia. Tim's first opening towards startups and Open innovation began in 2009 with the creation of Working Capital and the "call for ideas" project aimed at supporting young talents with research and business projects in the digital field. In 2013 Working Capital was transformed into the still existing TIM W-CAP, TIM's acceleration program. TIM selects disruptive digital startups to which it offers a business grant and - thanks to the Albo Veloce - immediate accreditation as TIM suppliers.

The selected startups are invited to attend the acceleration path, take advantage of the one-to-one mentorship and work on their projects. They can also participate in workshops and events and network with local communities.

Over the years, the innovation ecosystem has evolved, TIM W-CAP has been enriched with other projects and, from a business accelerator, it has been transformed into a real hub of open innovation which facilitates and supports the collaboration of TIM with startups and innovative SMEs. Among the projects that have been created there are: "Call for Startups" dedicated to the selection of realities with structured projects and a product or service prototype, Call for Partners dedicated to startups and SMEs with a digital solution already on the market or ready to be commercialized, projects of hackaton, bootcamps and finally TIM Ventures, the corporate venture capital company of TIM.

Tim Ventures was founded in 2014 with the initial aim of making seed investments in innovative startups for 4.5 million euros over the next 3 years. In 2016, the total investment of Tim Ventures in the capital of the selected startups was approximately 2 million euros, made in many cases in syndication with other investors and Italian venture capital funds. The CVC is still active and is actively investing in startups with the last investment in Satispay in November 2020.

Tim Ventures prefers to invest in innovative startups in the Internet, digital life, fintech, e-learning, the mobile evolution, e-health and green solutions. The CVC tries to invest in startups with a strong fit with TIM's business strategy and supports them in improving their product, growing on the market and identifying the best partners, also with the aim of facilitating the adoption in the TIM Group of innovative services created in partnership with the startups.

Pedius was the first investment by TIM Ventures, which, in December of 2014 entered the share capital of the startup with a total of 410,000 euros, in syndication with Sistema Investimenti and Embed Capital. Pedius is a mobile app which allows deaf people to make normal phone calls, using voice recognition and speech synthesis technologies. The startup was the winner of

TIM#WCAP in 2013 and was then adopted by Telecom Italia's Call Centers, breaking down an important communication barrier for deaf and hard of hearing people. The CEO of TimVentures, Salvo Mizzi, declared "TIM Ventures has a dual mission: the scouting for Telecom Italia of innovative solutions created by the best Italian startups and the system support for young great Founders who can help Italy grow. With Pedius we have achieved both objectives."

The investment was reinforced in 2017 with an injection of capital of €1,4 million in syndication with Invitalia Ventures and Principia SGR. At the time of the second investment the startup was already active in 9 countries (of which Italy, France, UK, Spain and USA) with 6 different languages and 13.000 registered users. The investment will enable Pedius to enter new geographical markets and to develop new products dedicated to elderly people.

In December of 2014 Tim Ventures invested in two others startups: WiMAN and Eco4Cloud. WiMAN is a startup that developed a technology that allows businesses to share their Wi-Fi network with customers, guaranteeing free and immediate access through authentication with a Facebook or Google account. The startup received a round of financing of 700 thousand euros from a pool of investors led by Tim Ventures and P101. Among the investors there were also Club Italia Investimenti 2 and Nanabianca. WiMAN was not new to Telecom Italia since, their collaboration began in 2012 when the startup was launched. At the time of the investment round, the routers of WiMAN were already used in 2000 public places in Italy and 500 abroad, including TIM stores, for a total of 3 million connections and 500,000 unique users. TIM Ventures strengthens its position within WiMAN's share capital through a second round of investment in December 2016 led by the P101 venture capital fund.

Eco4Cloud is a startup that developed an innovative algorithm that, optimizing the allocation of virtual machines within physical servers, allows to reduce the electricity requirement of data centers by up to 60%. A lower need for energy leads to tangible benefits both from an economic point of view and in terms of reducing emissions of harmful gases into the atmosphere. The investment of TIM Ventures, in 2014, was of 250 thousand euros in syndication with ventures funds Principia SGR and Dpixel, but the TIM's knowledge of Eco4Cloud began year earlier. EcoCloud was the winner of TIM # WCAP in 2011 and, since 2013, thanks to "Albo Veloce" the simplified procedure that TIM reserves for the best startups, it has become a certified supplier and it is successfully used within Data Centers of Telecom Italia.

The fourth investment of the CVC was Oilproject, the learning platform that offers a wide range of lessons, in the "MOOC" (Massive Open Online Course) mode, such as Coursera or Udemy. The investment, which took place in February 2015, was of 200.000 euros, however the startup has already been supported by TIM through TimWCAP. A second round of investment was completed in October of the same year, for a total of € 300,000 this time with the support of other investors such as Club Italia Investimenti<sup>2</sup> and Club Digitale. Thanks to the latter investment, Oilproject completed the development of the new Classroom Collaboration platform and launched it on the market.

The other rounds of investments for TIM Ventures are:

- A 200.000€ funding round in EDO, a startup accelerated by TIM #Wcap in 2013 that has developed an app for sharing and organizing digital content and materials of any kind. The investment was made in syndication with Club Italia Investimenti 2. Tim Ventures exited in 2019 when EDO was acquired by Moleskine.
- A 100.000€ funding round in Innaas, startup that operates in the Big Data sector helping companies to improve performance through data analysis and data transformation. Innaas was selected in 2014 by TIM #Wcap and was immediately used to process data from the TIM Stadium platform.
- A 100.000€ funding round in Unfraud, a startup that, thanks to its original technology based on artificial intelligence and bio-tech algorithms, imitates the behaviours of the human brain, determines dynamic patterns of behaviour, discriminates them and reports them to the system, so as to prevent fraud up to breaking down the 50% fraud in e-commerce.
- A 90.000€ funding round in Armnet, application that, through augmented reality on tablets or smartphones, allows operators to quickly and immediately identify intervention points and transit areas of underground networks.
- A 150.000€ funding round in Kopjira, in syndication with Club Italia Investimenti 2. Kopjira is a startup specialized in legal technologies, selected in 2014 by TIM #Wcap. The startup uses proprietary software that automatically collects information on the Internet aimed at tracking down any violations of copyright, patents, trademarks and privacy on the web and in peer-to-peer networks.
- A 150.000€ funding round in Crowdway, in syndication with Club Italia Investimenti 2. Crowdway, selected in 2014 by TimWCAP, is a fintech company that offers individuals and institutions the opportunity to receive exclusive information on financial markets,

through the real-time analysis of the behaviour of thousands of traders who trade on the stock exchange.

- A 600.000 funding round in Cloudesire, a platform that allows all software producers to bring their applications to the cloud and sell them at reduced costs, keeping them always updated and making them available on any cloud the end customer chooses. The startup was awarded in 2013 by TIM #Wcap.
- A 6.4 million euros funding round in Weschool, in Syndication with P101, Italia 500, Azimut, Cdp Venture Capital, Club Digitale and Club Italia Investimenti 2. The investment of August 2020, supported the platform used during the lockdown for distance learning, allowing more than 1 million active users every day not to interrupt the didactic continuity. WeSchool is a historic startup of TIM#WCAP, winner of a grant in 2010, which later became an innovative SME and today it is 14% owned by TIM.
- A 93 million euros funding round in Satispay, the Italian fintech of mobile payments. The investment was made in November 2020 in syndication with the private equity LGT Lightstone, the companies Tencent and Square and finally TIM Ventures which contributed with 20 million, more than 10% of Satispay capital. The round was conducted on the basis of a pre-money valuation of 180 million, which post-money reached 248 million. Thanks to this latest operation, the fresh capital raised by Satispay since its foundation in 2013 has risen to 110 million.

### **3.1.1. Insights**

We can derive some insights applying the literature of the previous chapters in this case study. With regards to the motivations for undertaking a CVC program, we can find both financial but also strategic motivations among the investments made by TIM Ventures, or in some cases the coexistence of both in the same investment. The investment in Pedius for example has a strong strategic component. The mobile App was used for the customer support service of Telecom to meet the needs of deaf people and therefore it is in the best interest of Telecom that the app improves or develops other features. It is sure however that the startup had a great potential, it grew significantly from the first investment and it is likely that will have also a good financial exit.

Similar were the motivations for Eco4Cloud investment, the startup that allows to reduce waste of energy by optimizing datacentres. Being successfully used inside of TIM Data centres, it is a positive thing for Telecom Italia to support them, since developing the same technology

internally may cost them much more. A similar situation repeats also for wiMan and Innaas investment.

It is not very clear how the other investments may help TIM in its core business, some of them may be used (EDO, Kopjira) while other not, however, as seen on the literature, there can be an indirect learning also from companies unrelated with the parent and some investment may be useful in “directing top management’s attention to important technological changes in the firm’s external environment” (Maula et al., 2013) or in building knowledge that enable a corporation to explore new business areas or new markets. What is clear is that a financial return from those type of investment is expected and probably also sought.

Regarding the investment process we can find in this case two of the characteristics highlighted and recommended by the literature in chapter 1. First, we can see that in 11 out of 16 round of investments Tim Ventures invested in syndication, confirming the tendency of investing in collaboration with other investors. Investing in syndication creates a sort of reciprocal approval and permits to establish a central position in the VC networks, fundamental to the access to high-quality deal flows. Second, we can notice that some startup, like Pedius, wiMAN and Oilproject, received two rounds of investments. To stage investments, by beginning with lower amount of funding and evaluating if invest more at a later stage is a common practice among CVCs and apart from protecting the investor, it is also a motivation for the startup to perform better hoping for other financing rounds.

A case of investment of TIM Ventures that were especially conspicuous since the first round was the entrance in the capital of Satispay with 20 million euros in November 2020. It can be explained by the fact that Satispay is a less risky investment being already widespread with more than 1 million users, and growing very rapidly, especially during the Covid19 pandemic since digital and contactless payments are more sure and more hygienic. In my opinion also the fact that it was known that Satispay could be used in Italian State cashback led the startup to be the target of such a large investment round (the round of investment had already been announced previously but it was expected to be 50 million euro, instead it was of 93million euros). Expecting a large increase in the use of this app for State cashback in 2021, the 20 million funding by TIM Ventures (compared to the 15million expected) can turn out to be a good investment from a financial point of view.

Concerning the creation of portfolio, we can notice that it is moderately differentiated with investments in different sectors like education, finance, technology but with a preference in the investments that involve digital innovation. The diversification of the investment can be considered unrelated since none of the investments is in the telecommunication industry.

Finally, the approach of Tim Ventures investment in Padius, give us a good example of Open innovation. TIM innovated its customer support service, making it accessible to deaf people with the help of Padius, if it had to develop this kind of innovation alone it would have been much more difficult and it would have cost more time and money.

*Table 4 - TIM Ventures' investments*

STARTUP	WHAT DOES IT DO?	STAGED	SINDYCATED
Padius	Mobile app which allows deaf people to make normal phone calls, using voice recognition and speech synthesis technologies	Yes, two stages	Yes
WiMAN	Technology that allows businesses to share their Wi-Fi network with customers	Yes, two stages	Yes
Eco4Cloud	Algorithm that, optimizing the allocation of virtual machines within physical servers, allows to reduce electricity requirement	No	Yes
Oilproject	Learning platform that offers a wide range of lessons, in the "MOOC" (Massive Open Online Course) mode	Yes, two stages	First stage: No Second stage: Yes
EDO	App for sharing and organizing digital content and materials	No	Yes
Innaas	Help companies to improve performance through data analysis and data transformation	No	No
Unfraud	Startup that allows to discover fraud in e-commerce	No	No
Armnet	Application that allows operators to quickly and immediately identify intervention points and transit areas of underground networks	No	No
Kopjira	Software that collects information on the Internet aimed at tracking down any violations of copyright, patents, trademarks and privacy	No	Yes
Crowdway	Fintech company that offers the opportunity to receive exclusive information on financial markets	No	Yes
Cloudesire	Platform that allows all software producers to bring their applications to the cloud and sell them at reduced costs	No	No
Weschool	Platform used during the lockdown for distance learning	No	Yes
Satsipay	App for digital and mobile payment services	No	Yes

*Table 5 - Characteristic of TIM Ventures*

Strategic/Financial motivations	Both financial and strategic motivations
Syndication	Majority of investment syndicated
Staging	Three staged investments
Diversification of investments	Unrelated diversification of investment
Open Innovation	Applied through some investment
Other particularities	Many investments already supported by the accelerator TIMWCAP

## 3.2. UniCredit EVO

UniCredit EVO (Equity Venture Opportunities) is the corporate venture capital vehicle of UniCredit created in 2016 in collaboration with Anthemis, the venture capital and advisory firm that focuses exclusively on fintech. The fact that it was created in partnership with Anthemis makes UniCredit EVO a joint investment venture, not a pure CVC but a sort of mixed form. Two dedicated vehicles which differ in the investment target and in capital committed were created:

- a proprietary equity fund, focused on well-established start-ups and follow-on investments in more mature and established FinTech businesses, with committed capital of €175 million.
- a fund in which UniCredit will act as anchor investor, investing in early stage digitally native financial services startups working on pioneering solutions, with €25 million committed capital.

The aim of UniCredit EVO, as stated by UniCredit himself is “to collaborate with emerging players within the FinTech ecosystem and explore, sustain and develop cutting-edge technologies and solutions to deliver next-generation experiences for our customers”. UniCredit EVO's strategy to achieve this goal, is “to acquire significant minority stakes in the companies, between 10% and 20%, to then join their boards of administration and support their projects, becoming strategic partners and not just shareholders” as said by Marco Pusterla, Head of Fintech Strategy & Equity Investments,

Like other companies, also UniCredit has both a CVC program and an acceleration program, however, differently from other companies the two initiatives seem not to work in synergy but separately. The acceleration program of the bank is called UniCredit start-lab and is focused on supporting young innovative startups in four main categories, Clean-tech, innovative Made in Italy, digital and life science. The help that UniCredit offers include cash grants, mentoring, network development, targeted training and specially tailored banking services. The startups supported by the acceleration program, however, are not the same that receive equity financing by UniCredit EVO. In my opinion there are two reasons: first the accelerator invests in a broader group of industries while the CVC invest just in fintech, second the accelerator target are early stage startups while the CVC invest mainly in well-established startups (€175 million out of €200 million total investment).

Among the investments made by the CVC, the most relevant is the one in Meniga in June of 2018. UniCredit took a €3.1 million minority stake in the fintech company through UniCredit EVO and, at the same time signed a strategic partnership with it. Meniga is an ex-startup company, founded in Iceland in 2009, when three of the largest banks in the country went bankrupt and 80 percent of Iceland's banking system plummeted suddenly creating tough times for Icelanders with high inflation, lower salaries, unemployment, and currency devaluation.

The cofounder of the startup affirmed that there was a lot of pressure to give citizens some relief and support and their idea of Meniga for comprehensive personal finance management was something that could help, so they became early movers in that industry in Europe. Meniga developed a new framework for digital banking through the use of advanced data consolidation and enrichment, meaningful customer engagement and new revenue opportunities. The company offers services like personal finance management, automated real-time notifications, predictive analytics & personalized engagement technologies, card-linked offers & consumer data analytics. The particularity of these services is that they are not offered just to the final clients, but they are mainly offered through banks for them to offer to their clients. The company, differently from others fintech, has as objective to help banks and not to try to replace them. The software is licensed to some of the biggest banks across Europe like Santander, Intesa Sanpaolo, Group BPCE, Commerzbank and UniCredit.

The investment of UniCredit in Meniga and their subsequent partnership was aimed at helping the bank in remote management of their digital channels, like the app for home banking, and to help the bank's customers to easily manage their banking and financial activities, while enjoying a simple and tailored user-friendly experience.

The investment in Meniga was reinforced in May 2020 and was made in syndication with other Banks (Groupe BPCE, the French bank as leading investor and the Portuguese Grupo Crédito Agricola) and Venture Capital (Velocity Capital, Industrifonden & Frumtak Ventures). However, this time the investment was not made through UniCredit EVO but directly by UniCredit.

Other investments in the portfolio of UniCredit EVO comprehend:

- +Simple, an insurance broker powered by artificial intelligence (AI) that caters freelancers, small and medium-sized businesses. The platform allows to generate a competitive and tailor-made insurance package by answering to ten questions.
- Fluidly, a straightforward cashflow management tool, founded in 2017 to help in cashflow forecasting and to facilitate businesses getting the cash they need by using data science, accounting domain expertise and machine learning.

- Neptune, a data connectivity network, that delivers high-quality bond market data from sell-side banks to buy-side clients. The data supplied are standardised, real-time and direct rather than the classic manual spreadsheets with their high probability of errors and poor timeliness.
- Aesthetic Integration, now named Imandra by their automated reasoning engine, is a system bringing rigor and governance to the world's most critical algorithms controlling and assuring if they are safe, explainable and fair. It was used also by Goldman Sachs in 2018 to design their auction book.
- Happy Money is a group of professionals from clinical psychologists, neuroscientists and data scientists to financial services professionals and technology experts, that work together to better understand and accelerate people's journey toward financial wellness.
- Betterment, an independent robo-advisor, helping people to better manage, protect and grow their money by offering a globally diversified portfolio of exchange-traded funds (ETFs).
- Trōv, founded in 2012 is an on-demand insurance platform that gives the possibility to their clients to insure single items, in every moment, from the mobile phone. The Trōv app also helps people to organize and store to the cloud, important information about the things they own, to make them accessible in every moment.

### **3.2.1. Insights**

A particularity in UniCredit EVO is its conformation in partnership with a venture capital firm, Anthemis. This peculiar conformation may be due to UniCredit's willingness to partner with someone with experience in the sector in order to enjoy the benefits deriving from the CVC but at the same time taking advantage of the experience of Anthemis in fintech investments. The partnership may suggest a financial orientation in UniCredit EVO investments, however, the group assert that "the aim of the partnership is to collaborate with emerging players within the FinTech ecosystem and explore, sustain and develop cutting-edge technologies and solutions to deliver next-generation experiences for our customers" highlighting that the investments has also a strategic component. The bank wants to turn the fintech threat into an opportunity, by investing in it and enriching the technological offer of the group.

As stated by the company, the investments are mainly in more mature and established fintech (the 87,5% of the fund). These kinds of investments are less risky than the ones in early stage start-up, however, they are also more costly.

By looking at Crunchbase database we can notice that most of the investment of UniCredit EVO were syndicated with other investors, moreover, being UniCredit EVO a partnership with the VC Anthemis, we know that every investment was syndicated at least with this VC. To our knowledge just one investment was staged, the one in Meniga. After two years from the first investments, another followed probably due to the good performance of Meniga and the positive partnership created.

About the portfolio, we can see that it presents a related diversification since there are different small and medium enterprises but each one of them is related to the financial or the banking sector. There are companies in the insurtech sector and companies that belongs to different field of retail banking and consumer finance, financial data and asset management. Returning to the literature, a related diversification suggest that the company want to deepen the learning process at the detriment of variety of ideas, however, it is questionable whether investment too much outside the fintech sector could be of strategic help for a bank. The banking industry, differently from other sectors, is a fairly limited sector. Amazon for example has differentiated widely its offering beginning from books, then retail and now also streaming of music and streaming of movies. Banks, however, can only carry out financial intermediation and activities connected or instrumental to the financial one, so investments must necessarily focus on the financial sector.

However, this did not stop UniCredit from innovating its services using Open Innovation and the help of Meniga. The collaboration made it possible for UniCredit to create a data-driven app, designed to help their customers understand and manage their money through easy to understand infographics and a good user experience. The innovation was very useful for the bank.

Table 6 - Investments of UniCredit EVO

Startup	What does it do?	Staged	Syndicated
Meniga	Ex-startup company that developed a new framework for digital banking using advanced data consolidation and enrichment, meaningful customer engagement and new revenue opportunities	Yes, investment staged through UniCredit	Yes
+Simple	insurance broker powered by artificial intelligence (AI) that caters freelancers, small and medium-sized businesses	No	Yes
Fluidly	Straightforward cashflow management tool	No	Yes
Neptune	Data connectivity network, delivering high-quality bond market data from sell-side banks to buy-side clients	-	-
Imandra	System bringing rigor and governance to the world's most critical algorithms controlling and assuring if they are safe, explainable and fair	No	Just with Anthemis
Happy Money	Group of professionals working together to better understand and accelerate people's journey toward financial wellness	No	Yes
Betterment	Independent robo-advisor, helping people to better manage, protect and grow their money by offering a globally diversified portfolio of exchange-traded funds	No	Yes
Trōv	On-demand insurance platform that gives the possibility to their clients to insure single items, in every moment, from the mobile phone	No	Yes

Table 7 - Characteristics of UniCredit EVO

Strategic/Financial motivations	Apparently strategic, possible also a financial objective
Syndication	Majority of investment syndicated
Staging	One staged investment
Diversification of investments	Related diversification
Open Innovation	Applied through Meniga
Other	CVC created in partnership with a VC already active in the fintech sector

### 3.3. A2A Horizon

A2A Horizon is the CVC arm of the Italian multiutility company A2A. A2A's interest in Open Innovation began in 2017 with the creation of Innova2a, a program for the creation and management of innovation, controlled by a team composed by the innovation manager of the various Business Units and Functions. The program is based on the exploration and the collection of ideas. The most prominent ones are then selected and experimented for a period from 1 to 6 months. At the end of this period, the startups are subject to further evaluation, if positive, they pass to the final step of the process that is the scale-up of the project at Group level. By December 2019 the company had already analysed hundreds of ideas, which have then been translated into over 60 initiatives and 15 innovative projects.

Innova2a, however, was just the first step into Open Innovation because in December 2019 the company made another important step by creating the corporate venture capital initiative A2A Horizon. The initiative was created in collaboration with some partners like 360 Capital, a VC fund, the Politecnico di Milano with the Poli360 fund which relies on University research, the Technology Transfer Office and the Polihub incubator. A2A Horizon foresees investments of up to 70 million with the aim of encouraging the Group's innovation through investments in high-potential startups. CVC investments are aimed at areas with great strategic value for A2a such as Circular Economy and Sharing Economy, Artificial Intelligence applied to the world of energy, blockchain, control systems for electricity grids or for the remote management of plants, smart applications for micromobility or home automation. The strategic proposition was also stated by the CEO that asserted: "With this initiative we are addressing startups to identify technologies and businesses innovative models that can strengthen our core business, support its evolution and generate value for the Group and for the territories in which we operate".

Greyparrot was the startup selected in July 2020 to be the first investment of A2A Horizon. The startup, winner of "The Europas Awards 2020" for the "Hottest Climate / GreenTech Startup" category, has developed a solution based on computer vision that integrates Artificial Intelligence and data analytics to automatically identify different types of waste and to provide information on their composition. Greyparrot was chosen to be implemented at the A2A's plastic selection and treatment plant in Muggiano (MI), therefore it has a strategic value for A2A as it will help the company in the digitization and automation of processes related to the waste cycle by improving further the efficiency of the collection and separation process.

In September 2020, A2A Horizon selected 3 other startups to support: Circular Materials, Hades and Siteflow.

Circular Material is a startup that patented a technology for the removal of heavy and precious metals from industrial wastewater. Circular Material, based and founded in Milan by the idea of Andrea Siano (CEO of Argos S.p.A.), is the first and only Italian investment made by A2A Horizon. The plant developed by the startup allows the effective recovery of metals such as arsenic, cadmium, nickel, zinc, copper, mercury, gold and silver. The collection of metals from water allows them not to be dispersed in the environment and allows them to be reused in order to return to generate value. Moreover, the technology adopted also makes it possible to drastically reduce treatment costs compared to current technologies allowing A2A not only to protect the environment but also to save more money.

Hades is a spinoff of the University ETH Zurich, that deals with sewer inspection. Under almost every road there is a sewer. In US and EU alone, there are approximately 2,4 million miles of public sewer, most of them built a long time ago and reaching their end-of-service life. Moreover, climate change increases the frequency and magnitude of rain events, putting a strain on already deteriorated sewers. Sewer plays an important role in environmental protection as they transport wastewater and rainwater from households to treatment plants, therefore, it is necessary to guarantee their correct functioning and Hades' objective is to help. Using artificial intelligence and machine learning, the solution devised by Hades is able to identify and locate leaks, breaks and cracks along the network, allowing predictive maintenance and savings of up to 40% on repair and modernization interventions.

Siteflow, based in France, is the first cloud-based field service management software for the digitization and maintenance processes in large production plants especially designed for complex operations (Nuclear, Oil&Gas...). Every type of manufacturing industry is digitizing however, for the more complex ones, just a few digital solutions meet expectations. Siteflow want to solve this problem by offering to nuclear, oil & gas, and construction industry, its software designed with the simplest interfaces and functionalities to simplify daily tasks and ease colleague's collaboration. Their solution makes it possible to improve the shared operating standards for the management of scheduled maintenance, the production of documentation for audit purposes and the enhancement of a centralized digital database.

### 3.3.1. Insights

A2a's corporate venture capital is recently created but has already begun to make its first investments. Similar to other CVCs, a2a Horizon is not A2A's only Open innovation initiative. Before it, innova2a was created to select and implement the best innovative projects in the field of multiutility. A2A Horizon's investments are mostly strategic as also stated by the CEO following the latest investment rounds: "[the investments are] A further step forward in our corporate venture capital initiative thanks to which the dialogue with the startup world continues to identify the realities capable of supporting our commitment to sustainable transition and modernization of strategic infrastructures for the growth of the country". Each one of the investments of A2A Horizon has a strategic component to reinforce the company's core business by contributing in different ways in different business units of A2A. The investment in Greyparrot will help in the waste collection and recovery, circular material and Hades will help in the water services and sewer control, Siteflow will help with the digitalization of the infrastructures.

Being A2A Horizon created in collaboration with other VCs it is as if it were investing in syndication with them, however, we have no information about the amount of capital made available by each subject in each round of funding. The CVC program is very recent so there have not been staged investments yet, we will see in the coming years.

The portfolio of startup investments is still small, however, up to now we can say that it is relatedly differentiated, since every investment is to solve a specific problematic in the sectors in which the company already operates.

The Company assert that the investments undertaken are explorative investments, to search for innovation. However, in explorative investments the knowledge created is distant from the existing knowledge base of the firm and the actual investment of A2A does not disrupt the system of knowledge used inside of the company, they improve it with new technology, so they can be considered also exploitative investments. Anyway, it is difficult to evaluate if the investments are exploitative since, as already mentioned, exploitation is referred by some scholars as the solely use of past knowledge and by some others as the pursuit and acquisition of new knowledge, albeit of a kind different from that associated with exploration, so it is a question of interpretation.

Table 8 - Investments of A2A Horizon

STARTUP	WHAT DOES IT DO?	STAGED	SINDYCATED
Greyparrot	Developed a solution based on computer vision to identify different types of waste and to provide information on their composition	No	-
Circular Material	Startup that patented a technology for the removal of heavy and precious metals from industrial wastewater	No	-
Hades	Spinoff of the University ETH Zurich, that deals with sewer inspections	No	Yes
Siteflow	First cloud-based field service management software for the digitization and maintenance processes in large production plants	No	No

Table 9 - Characteristics of A2A Horizon

Strategic/Financial motivations	Strongly strategic
Syndication	One investment syndicated and one not. Two unknowns.
Staging	No staged investment
Diversification of investments	Related differentiation
Open Innovation	Applied through each investment.
Other	<ul style="list-style-type: none"> <li>• CVC program integrated with another program of Open Innovation: Innova2a.</li> <li>• CVC created in collaboration with VCs and incubators</li> </ul>

### 3.4. Ad4Ventures

Ad4Ventures is the corporate venture capital arm of Mediaset group, the leading Italian multinational media group, and it is a particular type of CVC because it is a “media for equity” CVC. It means that Mediaset does not invest capital in the companies supported, but they offer communication and promotion plans on all their distribution channels, radio and TV, in Italy and in Spain, in exchange for equity shares in the startups selected. The investment vehicle, active since March 2013, was created by the TV group to encourage and support the creation of companies with high growth potential, active in the technological and digital area. The target of the investments are startups active in the consumer and retail area, to directly attract the final customer through TV advertising. Investments are mainly in companies with a proven business model in growth phase (no seed investments) and with their own management team. The CVC is present with two offices, one in Milan and one in Madrid to plan the advertising initiatives of each country. The CVC has delineated some investment criteria like:

- To invest in attractive market segments with double-digit revenue growth potential, innovative products and services, proven business model with strong management team
- To earn a minimum IRR
- To have just a minority stake involvement
- To have a clear path to exit

Ad4Ventures does not specify whether is searching for a strategic fit, it just mentions the benefit that Mediaset can bring to the investment target. First the company assert that the target companies cease to be clients and become true partners leading to a greater value creation. Then the CVC specifies that Mediaset can help in the growth of the companies through promotion and visibility offering their multiplatform and multi-territory planning. Moreover, it can offer the know how in advertising and promotion and other support services.

There are many companies that accepted the media for equity by Ad4Ventures, I will go through the more significant.

One of the first and most important investment for Ad4Ventures was the La Nevera Roja, a Madrid based food delivery startup, with an increasing integration with the restaurants both technologically and logistically (through an own logistic activity). Ad4Ventures acquired the 11,8% of the company in July of 2014 for a media for equity deal of the value of €2,5 million. In 2015 La Nevera Roja was purchased by Food Panda, an initiative controlled by the venture

capital giant Rocket Internet. The exit gave Ad4Ventures an important return, being the purchase price €80 million.

Another important exit for Ad4Ventures was the one in ISalud in 2018. ISalud is a Health insurance online comparator and broker. There are many online companies that compare car insurance or utilities services but there are not so many health insurance comparators. Isalud acknowledge this fact and leveraged its operations as an outstanding broker/ consultant team that acquires customers for their partners and assists users along the process. In 2015 Ad4Ventures entered the share capital of Isalud and exited in 2018 because of the acquisition by CNP of a 60% stake in the startup for €30 million. Ad4Ventures affirmed that the exit resulted in a very attractive return, however, there are no information about the media for equity value of the CVC investor.

Jade1290 GmbH now known as Westwing, the German home and living e-commerce company was another consistent investment for Ad4Ventures. As reported on the Mediaset Group Annual Report of 2014, as part of the activities of Ad4Ventures, the subsidiary RTI S.p.A. (Reti Televisive Italiane) acquired in 2013 a 1.8% equity interest in the company Jade 1290 GmbH. An ulterior increase in capital was subscribed in 2014 for an amount of EUR 3.0 million, increasing Mediaset Group's percentage investment from 1.81% to 2.22%. In October 2018 the company went public and its total market capitalization at IPO was about €528.3 Million. The share price at IPO was €26 and in total €131,6 Million were raised (Cruchbase data).

In the portfolio of Ad4Ventures there is also The Colvin Co, Spanish startup of flower delivery. Ad4Ventures entered in the capital of the startup in 2017 and renewed its commitment in 2018 coinvesting with other financial sponsors in both rounds. In exchange for equity, Mediaset contributed to Colvin's growth through TV campaigns especially during the most relevant moments for the sector such as Valentine's day, Women's day and Mother's Day. This strategy allowed The Colvin Co to significantly increase traffic on the site and sales growth.

Among the other investments there are: Hundredrooms, metasearch engine for vacation rentals (exit in 2019 when the startup was acquired by its competitor Holidu), Cornerjob, a job search app (exit in 2019 when the startup was acquired by Eurofirms), Privategriffe, marketplace dedicated to second hand fashion items (exit in 2016 when the startup was acquired by Axélero), 21Buttons, a fashion social network; Foodscovy, an online Italian food specialities shop;

Spotted, a dating app; DeporVillage, an Online sporting goods shop; Termostore, a Digital platform leader in HVAC (Heating, Ventilation and Air Conditioning) and many others.

### **3.4.1. Insights**

Ad4Ventures, being the venture arm of Mediaset is effectively a CVC, however it presents some peculiarities that differentiate it from the other CVCs in exam. Ad4Ventures, differently from other investment funds, use the “media for equity” instead of cash for making investments. By doing so the CVC does not need extra cash to invest like others CVC so it is a more flexible way of investing for media and advertising companies like Mediaset, however, it brings some cons. For the corporate venturer, the fact of being a “contribution in kind” may limit the shareholder rights of the media VC in certain situations. For the startup, the contribution received is limited to advertising and media, so it needs to search also for other investors to receive cash especially if the investment is a seed investment. For the startup there is also the problem of VAT payment which must be assumed by the startup and can result in a serious working capital problem. A possible solution comes from banks that are starting to offer credit facilities to finance this cash requirement at reasonable interest rates using the VAT payable by the tax authorities as collateral to secure that debt.

Another peculiarity of Ad4Ventures is the composition of its portfolio that is very diversified and in unrelated way. The approach of Ad4Ventures suggest that the company is not searching for any strategical benefits in their investments but just for financial returns. Moreover, the CVC specifies some investment criteria like “to have a minimum return rate on the investment” and “to have a clear exit strategy” that highlight a financial motivation under the investments. None of the companies supported by Ad4Ventures were used in an optic of applying Open Innovation and none of them can help Mediaset in its core business. The choice of the target is mainly due to the television fit, so how effectively could be the advertise in increasing sales for the startup, instead than strategic fit with Media and Advertising business. In the case of The Colvin Co, for example, the fact of being a business with very strong seasonality make TV very effective, concentrating campaigns in those peaks when purchase intent is much higher, however, the flower e-commerce cannot help Mediaset strategically. Same thing also for the dating app, the home and living e-commerce, the fashion social network and others. In this sense Ad4Venture is more similar to an independent VC instead of a CVC.

Some similarities with the other cases are the syndication with other investors, and the staging of investments. The syndication with other VCs is even more marked in Ad4Ventures since they do not offer capital, so they have to find some financial investor to join the round of

investment. The staging of investment has a positive effect for the target in the case of media for equity because it permits to the startup to receive massive advertising facilities in different stage of their life.

*Table 10 - Some investments of Ad4Ventures*

STARTUP	WHAT DOES IT DO?	STAGED	SYNDICATED
La Nevera Roja	Madrid based food delivery startup	No	Yes
ISalud	Health insurance online comparator and broker	No	Yes
Westwing	German home and living e-commerce company	Yes, two stages	Yes
The Colvin Co	Spanish startup of flower delivery	No	Yes
21Buttons	Fashion social network and marketplace that allows influencers to share photos of their outfits,	Yes, two stages	Yes
Foodscovery	Online Italian food specialities shop	-	-
Spotted	Dating app	-	-
DeporVillage	Online sporting goods shop	Yes, two stages	Yes, both
Termostore	Digital platform leader in HVAC (Heating, Ventilation and Air Conditioning)	-	-
Hundredrooms	Metasearch engine for vacation rentals	-	-
Cornerjob	Job search app	No	Yes
Privategriffe	Marketplace dedicated to second hand fashion items	No	No

*Table 11 - Characteristics of Ad4Ventures*

Strategic/Financial motivations	Strongly financial
Syndication	Majority of investment syndicated.
Staging	Three staged investment
Diversification of investments	Unrelated differentiation
Open Innovation	No use of Open Innovation.
Other	Media for equity instead of capital.

## 3.5. Sella Ventures

Sella Ventures was the VC initiative of Banca Sella, however, during its lifetime, it changed and now it is quite far from what is referred normally as CVC. On the annual financial report of 2018, the group report: “The Group operates with a model inspired by the new open ecosystem of digital innovation and of Fintech through open banking activities, [...] with SellaLab, platform of corporate innovation and with Sella Ventures, venture capital that finances various Italian startups, funds, incubators and accelerators.”. Sella Venture is therefore described as a VC that finance Italian startups, among others, in a project of Open innovation, consistently with the definition of CVC.

Sella began to invest in startup in April of 2016 with an investment of 110.000 euros in Konoz, a startup which allowed those who make educational videos on YouTube to create an online school and receive donations in exchange for additional services, such as private lessons and downloadable material. The investment however was not successful since the startup closed in the fall.

The second investment for the CVC was the one in Satispay in 2017. The round was of €18 million and Sella Ventures invested in syndication with Banca Etica, Iccrea Banca and the VC Shark Bites.

Other investments in startups were made directly by Banca Sella Group but not through the CVC vehicle, of which Satispay remains the only investment. The reason is that, as a ready mentioned, the CVC structure changed.

In May 2019 Sella Ventures became Sella Ventures Partners SGR. Objective of the new SGR is to create a “fund of VC funds” to offer private and institutional investors a privileged access to the international innovation ecosystem by investing in VCs funds in the most promising markets, with a high return potential. The fund nominated “Sella Venture Partners Fund of Funds I” concluded, on October 2020, the first phase of capital raise with €30 million and already began to invest in VCs specialised in ICT and software, biotechnology and life science.

### 3.5.1. Insights

When the group began with its CVC initiative, the aim was to incorporate it within their Open Innovation project, together with other initiatives, as it can be red on Annual reports. To use CVC as a tool to apply Open Innovation, it is necessary that the investments are strategic for

the research and development of the Company. The first investment in Konoz was not very good for Sella since the startup closed just six months after the capital injection resulting in a loss for the company. The second investment, Satispay seems to be more profitable and seems to have a more strategic focus as commented on the press release of the investment round: “The support of the Sella Group for Satispay, through Sella Ventures, reflects the clear vision of a strategy aimed at covering the 360 ° electronic payments segment with selection and support of the best tools available on the market, proprietary or third-party, and between them supplementary. This decision reaffirms the role of the Group among the financial institutions that has always been at the forefront line in the research and development of cutting-edge payment technologies”. However, in 2019, the CVC changed and shifted its focus toward investment exclusively in other funds. Although the investments by Sella Venture Partners SGR are indirectly also in startup and in innovation, they can no more be considered CVCs investment if we take in consideration Chesbrough’s definition of CVC investment as stated in Chapter 1 (AIFI’s definition also included the indirect investment).

Indirect investment means that the company cannot learn or directly get in touch with new ideas or technologies, so this very important component for CVC is completely lost. However, it doesn’t mean that Banca Sella does not innovate, rather it does it with other initiatives. The most emblematic example is Hype, created inside of SellaLab, the accelerator of Banca Sella. Hype is an electronic money account with a card associated, that allows to manage money from the smartphone, to exchange money with friends and to receive a cashback, becoming therefore a competitor of Satispay.

*Table 12 - Investments of Sella Ventures*

STARTUP	WHAT DOES IT DO?	STAGED	SYNDICATED
Konoz	Allowed those who make educational videos on YouTube to receive donations in exchange for additional services	No	No
Satsipay	App for digital and mobile payment services	No	Yes

*Table 13 - Characteristics of Sella Ventures*

Strategic/Financial motivations	Both financial and strategic motivations
Syndication	One investment syndicated and one not
Staging	No staged investments
Diversification of investments	Related and unrelated diversification
Open Innovation	Not applied through CVC
Other	Sella Ventures became Sella Venture Partners SGR and shifted its focus toward investment exclusively in other funds. It can no more be considered a CVC

### 3.6. Neva Finventures

The CVC Neva Finventures was launched by Intesa Sanpaolo in April 2016 with an initial endowment of €30 million. The objective of the fund, as stated by the bank was to invest in Fintech and in innovative realities that presents synergies with the Group's business units or that represent new potentially disruptive business models. The CVC was constituted as a S.p.A., wholly owned by Intesa and the management is entrusted to the Innovation Center. The CEO Carlo Messina assert "establishment of Neva Finventures confirms the importance of innovation for ours Group and its commitment to renew itself and look proactively to the future and to challenges of the market. For Intesa Sanpaolo this is a long-term investment aimed at seizing the most promising opportunities also at an international level, to promote the growth and to continuously improve the level of the bank's services". In the press release for the launch of the CVC it is reported that Neva Finventures will mainly carry out minority investments together with other institutional investors, with a particular attention to international markets like United States, Europe and Israel. Start-ups will receive not only capital, but also the opportunity to grow in synergy with the business units of the bank. Moreover, it is reported that there is the possibility that the CVC will also make investment in Venture capital in order to facilitate access to quality deal flow at international level. Since Neva's inception the investment rounds in startups were six; R3, Iwoca, Oval money, Matipay, BacktoWork24 and Yolo. Added to these, Neva entered in the capital of the accelerator Techstars, the VC Endeavor Catalyst III and the German VC Rocket Internet Capital Partners of strategic interest not only for the possible positive financial returns but also for evident industrial synergies with the activities of the CVC and possible complementarities with others digital initiatives.

The first startup investment for Neva Finventures was in May 2017 when the CVC entered in the capital of R3 CEV, the largest consortium of global financial institutions collaborating to develop a platform and commercial applications for Distributed Ledger Technologies (DLT), that is, those technologies that allow the distribution of data control among multiple subjects, such as blockchains. The round of investment represented the biggest fund raising in the world in the context of DLT. Over 40 institutions from over 15 countries participated and a total of 107 million dollars were raised. Among the Investors there were also giants like Bank of America Merrill Lynch, HSBC, Barclays and Intel. The CEO of R3, David E. Rutter, commented: "This investment is unprecedented. Many of the world's largest financial firms have come together not just with capital support, but with a robust commitment to work with R3 in developing industry solutions that will be the building blocks of the new financial services

infrastructure”. R3 asserted that it would use the funds to accelerate technology development especially on Corda, R3’s DLT platform for regulated financial institutions, and its infrastructure network. R3 has proven the collaborative model can successfully drive innovation in financial services and Intesa wanted to contribute.

In July 2017, Neva Finventures acquired a minority stake in Iwoca, the UK-based fintech company specialised in financing small and medium sized enterprises. The fintech offers a fully digital platform based on a technology that pools customer information, allowing loans of up to 100,000 euros to be approved quickly. In this round of investment participated Neva alone, without the participation of other VC or other companies. For Intesa, the aim of the investment was to open a new system of financing in favour of a SMEs with revenues of up to 5 million euros. “Investing in Iwoca is of strategic importance to us, since it strengthens the position of Intesa Sanpaolo Group in the area of new business models, and specifically in highly innovative digital financial services. The industrial synergies between Iwoca and Intesa Sanpaolo could be significant in the coming years and will allow the Intesa Sanpaolo Group to enter segments of the market not served by other banks.” Commented Maurizio Montagnese, CIO of the Group.

Oval Money was the third startup investment for Neva. The fintech wants to revolutionize the world of savings by shortening the distance between people and finance, allowing everyone, regardless of the capital availability, to invest small amounts of savings in line with personal habits and possibilities. The strength of Oval is to guarantee a bottom up, reversible and innovative approach to the world of savings by ensuring the same security standards of a banking institutions. The aim of the investment was to make a partnership between Oval Money and Banca 5 the new proximity bank of Intesa Sanpaolo focuses on Instant banking (Banca 5 allows to make bank operations from tobacconist with over 20.000 tobacconists affiliated).

In the press release is reported that the partnership represents an important step to exploit all the potential of the collaboration between the fintech world and the advanced banking model of Banca 5. A year later, in fact, it was reported that the partnership allowed to integrate the functionality of Banca 5 to the features of Oval Money by offering an innovative solution in the relationship with the bank and in the management of savings to a new target of customers, increasing the rate of financial inclusion. The investment round of June 2018 allowed Neva Finventures to enter the capital of Oval Money, however this was not the first nor the last investment in the startup by Intesa Sanpaolo. The bank already entered the capital of the fintech in 2016 through Intesa SanPaolo, b-ventures, the accelerator of the bank, and renewed its

interest in the fintech by investing in October 2019 through Eurizon Capital SGR the asset management company of Intesa Sanpaolo.

Yolo (acronym of You Only Live Once) is an insurtech company, founded in 2017, which sells on-demand and pay-per-use micro-insurance policies on a daily or monthly basis. The €5 million investment round of January 2019 led by Neva Finventures and Barcampers Ventures (managed by Primomiglio SGR) was the third investment round for the insurtech to which participated also Net Insurance e Miro Ventures. The investment allowed Neva to enter in the startups capital with a minority stake of 20%. Mario Constantini, director of Intesa Sanpaolo Innovation Centre and AD of the CVC, defined the investment as “strategic for the innovative development in the damages branch of Intesa Sanpaolo Assicura and for Banca 5”. Another round of investment by Neva Finventures followed in July 2020. This time the funding was for a total of €3 million, the lead investors were Neva Finventures and Intesa Sanpaolo Vita, the insurance division of the bank (new shareholder), the co-lead investor was Primomiglio SGR and other participants were Banca di Piacenza, the consulting firm Be Shaping the Future and CRIF, the company which manages the database of financial profiles by assigning them a trust score. Yolo has a strategic value for the entire Insurance division. The strengthening of Neva Finventures position and the entrance of Intesa Sanpaolo Vita in Yolo’s capital are meant to exploit all the potential of Insurtech, increasing the use of digital channels, and forms of instant insurance. With the aim of keeping up with the technological changes in the insurance market, the digitization of processes and the change in offer models, which are increasingly based on immediate customer needs, the investment in YOLO will be accompanied by a permanent laboratory of experimentation of digital innovation.

In June 2019, Neva Finventures decided to shift its investment focus on fintech and insurtech by entering in the capital of a crowdfunding company: BackToWork24. The CVC has invested €4 million for a minority stake in the startup and has also acquired an option to take a majority stake in the future. With this investment Neva surpassed the €30 million initial objective of the fund and intend to expand the capital endowment up to €100 million. Mario Costantini CEO of Neva explained to Bebeez the rationale of the investment by saying “thanks to the intervention of Neva, BackToWork will be able to become an advisory company able to support entrepreneurs in their business development projects. [...] Moreover, nothing prevents that in the case of startups that are interesting for Neva, it can invest in the offers on the platform or in subsequent rounds of the companies that have conducted campaigns on the platform”. In any

case, Costantini stressed, "the goal of this participation is to invest in the champions of tomorrow who will help transform our economic, social and productive system".

In one year, the collaboration between Intesa and BacktoWork24 has led to the achievement of great results, more than 50 SMEs and startups have raised over 16 million euros from private and institutional investors. These exciting results were one of the reasons that led Intesa SanPaolo to take over from Neva its share in the Italian crowdfunding portal in September 2020. Other motivation regards the purchase options that Intesa has in the coming years to rise in the majority and the fact that BacktoWork is considered by the Intesa Sanpaolo group to be an industrial type investment and it was therefore considered more appropriate to bring it to the parent company perimeter rather than to Neva. The new shared goal is to provide companies and investors with innovative and sustainable tools capable of accelerating their growth and the achievement of goals.

Matipay is a fintech startup that developed a new payment system that makes it possible to purchase online services and products with cash, using the physical network of banknote readers and coin acceptors with which vending machines are equipped, to give the possibility to buy online to customers who don't have the instruments to do it. The startup also solution for the vending industry to replace the current "physical key" with a digital wallet installed on the users' smartphone. Neva Finventures entered in the capital of the startup in October 2019 by investing 7 million euros. The investment is strategic for Intesa Sanpaolo since the bank expects synergies in the mobile channel and in the integration of digital payment services that will help to accelerate the Group's leadership in digital payment systems. Mario Costantini, CEO of Neva Finventures, explained "We immediately grasped the potential of the team, but above all the disruptive force represented by the target concerned: workers, of course, but also and above all students, a segment usually difficult to intercept."

### **3.6.1. Insights**

Neva Finventures is the financial arm of the Intesa Sanpaolo Innovation centre, the division dedicated to acceleration of startup which includes training workshops, call for ideas, startup initiatives and scaleup programs. With regards to the motivations for undertaking a CVC program, we can see that a strategical motivation was behind of each investment made by Neva. The purely strategic motivation of the CVC is supported by the fact that Intesa already invest for financial motivations and for the support at startups through three Venture Capital funds managed by the bank: Atlante Venture, Atlante Seed and Atlante Mezzogiorno.

The strategic objective of the fund can also be understood looking at the composition of the investment portfolio. The portfolio presents a related diversification with four fintech companies, one insurtech company and just one company in a different sector, BackToWork24, that however stayed in the CVC portfolio just one year. As already stated for UniCredit, even if a related diversification in the portfolio limits the variety of ideas, it is not a big limit for banks since investments must necessarily focus on the financial sector.

Open Innovation was applied for various projects in which Neva invested. The Corda platform of R3 is used by Intesa to apply the blockchain to the interbank check process, which verifies the correspondence of activities involving two different banks, for example transactions carried out between two customers of two institutions. The use of the R3 Corda platform is also open to institutions that are not shareholders of R3, since to be successful, the application of the blockchain needs to be adopted by as many subjects as possible. However, investing in the platform allowed Intesa to collaborate in the development of blockchain technology and, more generally, distributed ledger technology (DLT) in financial services. The platform of Iwoca was used to offer a better lending service to SMEs, Oval money gave the possibility to Intesa to offer an innovative solution in the relationship with the bank and in the management of savings and Yolo helped the bank increase the use of digital channels, and forms of instant insurance. Interesting about Neva Finventures is its willingness to change from S.p.A. to S.G.R. (authorized asset management company) similarly to Sella Ventures. The change of Neva will be also in its investment focus that will no longer be only on fintech, as it has been until now, but on all fields of application of technological innovation, from automotive to renewables, from artificial intelligence to new materials. The transformation in SGR will allow Neva to have additional resources and the objective is to reach a funding target of 250 million by the summer of 2021. It is not clear whether the objective of the fund will remain strategical or will shift to a more financial focus.

Table 14 - Investments of Neva Finventures

STARTUP	WHAT DOES IT DO?	STAGED	SYNDICATED
R3 CEV	Consortium of global financial institutions collaborating to develop a platform and commercial applications for Distributed Ledger Technologies (DLT)	No	Yes
Iwoca	Fintech company specialised in financing small and medium sized enterprises	No	No
Oval money	Allow to invest small amounts of savings in line with personal habits and possibilities	Staged with the accelerator and the asset management company of the bank	Syndicated with Intesa SanPaolo
Yolo	Sells on-demand and pay-per-use micro-insurance policies on a daily or monthly basis	Yes, two stages	Yes, both
BackToWork24	Crowdfunding company	No	No
Matipay	Developed two solutions: a digital wallet to substitute “physical key” in vending machines, and a new payment system that makes it possible to purchase online services and products with cash, using the physical network of vending machines	No	No

Table 15 - Characteristics of Neva Finventures

Strategic/Financial motivations	Strategic
Syndication	Three investment syndicated (one with Intesa SanPaolo) and three not
Staging	Two staged investments
Diversification of investments	Related diversification
Open Innovation	Applied through many investments
Other	<ul style="list-style-type: none"> <li>• Changed from S.p.A. to S.G.R. and change of investment focus</li> <li>• Investments staged or syndicated with other subsidiaries of the bank, or the bank itself</li> <li>• Investment also in VCs and accelerators</li> </ul>

### 3.7. Reale Group Corporate Venturing

Reale Group Corporate Venturing is the CVC of Reale Mutua Assicurazioni created in 2017. The CVC is one of the five parts of the Digital & Innovation division and is responsible for researching and investing in the best Italian and foreign innovative startups to accelerate the innovation process and to create industrial synergies with the companies of the Group. Apart from minority equity investment aimed at providing startups with the necessary economic resources while respecting their independence, the group also offers itself for collaborations with startups to development of partnerships and exchange of services. The group utilize a balance sheet model (corporate/direct investment) to conduct the investments, through the allocation of part of the assets of the group to this type of initiative without creating a specific subsidiary. This model allows a very good alignment between the corporate strategy, the innovation plan and the activity of the CVC, compared to the creation of dedicated fund, however it lacks in autonomy, as explained in Chapter 1. Reale Group Corporate Venturing has a dual purpose; To introduce new business models to offer a better service to its customers and sales networks, and to find innovative solutions capable of improving its products and services' offer.

As reported on the group's website, the investment focus is on insurance products and services, digital health to improve the efficiency of healthcare delivery, sales and distribution, fintech and payments, mobility, innovative solutions for risk assessment, real estate sector, insurance compliance, claims prevention.

Reale group wants the creation of value given by the collaboration with the startup to be reciprocal and, for this reason, in addition to offering capital the insurance company provides startups with a series of assets such as skills, the distribution network, its customers base and its internationality (being present in Italy, Spain and Chile).

The first CVC investment for Reale Group was in 2018, when the insurance company acquired the 19,9% of Yago, the startup that developed Auting, a platform of peer to peer car sharing which allows to borrow (for a fee) cars owned by third parties. The insurance company was with the startup since its development by offering a specific insurance that covers both the driver and the vehicle owner. The investment represents for Auting an opportunity to develop new customers, offer specific insurance coverage, develop new service distribution methods and for Reale Group an opportunity to acquire specific know-how and to offer its policyholders innovative solutions for mobility and sustainability. The car sharing will be one of the mobility models of the future so Reale Group wants to begin to have some experience in the field.

Charlie24 is a Belgian startup that developed a web app for on-demand roadside assistance. The startup received a funding round in February 2019 from Blue Assistance, the service company of Reale Group. The partnership with Reale Group has allowed Charlie24 to penetrate the Italian market, receiving the necessary support for the development of the B2B and B2B2C markets while allowing Reale Group to digitalize a typically offline process in a very short time by integrating Charlie24 in the Blue Assistance process. This element of innovation not yet present in the Italian market has allowed Reale Group to further improve customer satisfaction by guaranteeing top-level and reliable roadside assistance services.

The third investment is represented by Moneymour, a fintech startup that has developed an algorithm based on Artificial Intelligence and Machine Learning that allows to speed up and automate the credit scoring process and, in a few seconds, approve a loan. Reale group exited from the investment in February 2020 when the startup was acquired by the fintech Klarna. The ROI of the investment was 175%. Matteo Cattaneo, Chief Digital Innovation Officer commented “In the case of Moneymour, the investment allowed Reale Group to acquire skills and knowledge in the field of fintech and innovative payment services on the one hand and, on the other, allowed the startup to develop and refine its business model, making it attractive in the eyes of one of the major players at European level in the offer of payment and purchase solutions. The exit positively enhances the growth path made together”.

Pharmecure is a booking platform for the home delivery service of drugs (with and without prescription) and any other product that can be purchased in pharmacy. Reale Group in November 2019 acquired the 16% of the startup. The strategical objective of the investment was to integrate the service of Pharmecure inside of Blue Assistance to offer a better customer experience and to strengthen and relaunch Reale Group’s position in the welfare and health world.

Finally, Tribe is a Norwegian startup that distributes products from various local insurance companies through its digital channel, offering E2E digital solutions. The acquisition of 10% of the startup capital was carried out by Reale Seguros, the Spanish company of the Group and will give Reale Group the right to have its own representative on the boards of administration of the Norwegian holding and its subsidiaries. This operation combines Reale Group's dual objective of investing in innovation with the acquisition of start-ups in the field of insurtech and continuing its international expansion.

### 3.7.1. Insights

The CVC program in Reale Group has a strong strategic rather than financial component as also stated by Andrea Birolo, Head of CVC in Reale Group. The objective behind the creation of a CVC program in 2017 was to look for startups in which to invest or to establish partnerships with the aim of accelerating the process of innovation and change, through the integration of the business models of startups with that of Reale Group.

Reale Group Corporate Venturing has made just six investments from its inception until now; however, we can assert that the portfolio presents an unrelated diversification because of the different sector in which the startups operate. Differently from the bank's CVCs which focused their investment just on fintech, Reale Group's CVC apart from investing in Insurtech focused its investment also in the customer service area. These latter investments were aimed at improving the customer satisfaction; with Pharmecure by giving the possibility of drug delivery and with Charlie24 by offering on-demand roadside assistance in a more efficient way.

The CVC did not collaborate in the investment round with other investors; however, it has developed a network with other VCs, accelerators and incubators with whom Reale Group share a first research framework.

The investment of Reale Group, as pointed out by Head of CVC Andrea Birolo in an interview for Fintastico's Blog, can be considered both incremental investments, those that support the current strategy and have a deep connection with the startup, and enabling investments, those aimed at developing and stimulating the ecosystem of the company. In other words, we can say that they are both explorative to search for new innovative idea and exploitative to support and exploit all the potential of Reale's strategy.

As stated by Andrea Birolo during the Italian insurtech association webinar of 22/12/20, the last phase of the investment, the integration of the idea in the current business model, is the most important part of the process and the one that lead to the real value creation. The startup that was better integrated with Reale Group was Charlie24 and represent the more significant example of how Open innovation has been applied inside of the group. To date, as reported by Andrea, the 40% of roadside service by the group is performed with Charlie24, so it was very well integrated inside of Blue Assistance model bringing benefits both to the corporate and to the startup. Open innovation has been applied also for other investments like pharmecure and Auting while other have still not reached the same level of maturity and advancement of integration paths.

The last investment made by the insurance company at the end of August 2020 is an investment in a VC fund, following the trend of Banca Sella and Intesa Sanpaolo. As explained by the head of the CVC program, this is surely a financial investment, but it has also a strategic objective. VC stakeholders are asked what problems they are working on and then Reale Group acts as an interlocutor to seek solutions, accelerating in this way the transformation path. Moreover, the VC, FinTLV, is active in the Israeli market allowing Reale Group to develop a point of contact with Israeli's startups.

*Table 16 -Investments of Reale Group Corporate Venturing*

STARTUP	WHAT DOES IT DO?	STAGED	SYNDICATED
Yago (Auting)	Peer to peer car sharing platform which allows to borrow (for a fee) cars owned by third parties	No	No
Charlie24	Web app for on-demand roadside assistance	No	No
Moneymour	Algorithm that allows to automate the credit scoring process and, in a few seconds, approve a loan	No	Yes
Pharmecure	Booking platform for the home delivery service of drugs	No	No
Tribe	Distributes products from various local insurance companies through its digital channels	No	No

*Table 17 – Characteristics of Reale Group Corporate Venturing*

Strategic/Financial motivations	Strongly strategic
Syndication	One syndicated investment and four not
Staging	No staged investment
Diversification of investments	Related and unrelated diversification
Open Innovation	Applied through some investments
Other	<ul style="list-style-type: none"> <li>• Invest also in a VCs rather than just in startups</li> <li>• Direct investments through “balance sheet” model</li> </ul>

### 3.8. Chiesi Ventures

Chiesi is an international research-oriented group based in Parma which research, develops, produce and markets innovative drugs for the respiratory system, for neonatology, for rare diseases and for others specialist fields. In September 2014 the Group launched its CVC initiative with the collaboration of A. M. Pappas & Associates, VC active in the field of innovative therapies and rare diseases. The decision to collaborate with a well-known pharmaceutical VC fund with experience and consolidated results in the establishment and development of entrepreneurial companies is due to the desire of having a support to access, evaluate and manage investment opportunities. The fund is a separate legal entity from the Chiesi Group but will maintain strategic connections with it. The goal of the CVC is, in fact, to complement the strategic interest of Chiesi in the area of rare diseases by investing in early stage development opportunities. and expanding the network of Chiesi contacts in the United States among universities, venture capital investors, rare disease patient organizations and entrepreneurial companies developing treatments for rare diseases.

Chiesi Venture is not the only project of Open Innovation for Chiesi. Similar to other company in exam, Chiesi has other programs to invest in Open innovation. One of those is WeStart, an entrepreneurship program developed as a challenge through which Chiesi intends to find new ideas and new entrepreneurs, it was awarded among the best practices of 2018 by the Open Innovation Osservatory. Both projects, CVC and WeStart, are aimed at innovating the company, however, they focus on very different aspects of innovation, so they are kept separated.

The investment focus for Chiesi Ventures is in four main areas: traditional small molecules and biologics, advanced therapies, reformulation technologies and devices, disease discovery, diagnosis and management. Chiesi Ventures invested in a total of 10 companies, but just one of the investments was as a lead investor and it was the one in Glycomine.

Glycomine is an early-stage biotech company that is developing therapies for critical unmet orphan diseases of glycosylation that can cause serious, sometimes fatal, malfunction of multiple organ systems in affected individuals. The company received two rounds of financing by Chiesi Ventures. The first was a \$12 million round that saw Chiesi as the lead investor and allowed Giacomo Chiesi to have a seat on the biotech's board, To the round of investment of November 2016 participated also Sanderling Ventures, which had a seat on the board too, and some high net worth individuals as well as patients. The second round in which Chiesi

participated in 2019 was a \$33 million round led by Novo Holdings to which participated also Asahi Kasei Pharma Corporation, Mission Bay Capital and Sanderling Ventures.

4D Molecular Therapeutics (4DMT) company focused on the discovery and development of novel adeno-associated virus (AAV) vectors to unlock the full potential of gene therapy for the treatment of monogenetic disorders. The company received two investment rounds from Chiesi Ventures, the first in September 2018 and the second in June 2020 and they were respectively of \$90 million and of \$75 million. Both the investments were syndicated, to the first participated Viking Global Investors (lead investor), Pfizer Ventures (co-lead investor), Chiesi Ventures, Pappas Capital and many other VC funds, to the second, led again by Viking Global Investors participated the existing investors mentioned before and other new ones. Chiesi Ventures exited the investment when 4DMT went public in December 2020.

VelosBio, Inc. is an oncology focused biotechnology company which is developing novel antibody-drug conjugates to treat haematological cancers. Chiesi Ventures participated in the funding of the company in October 2018 together with Arix Bioscience, Pappas Capital and Sofinnova Investments, the total money raised was \$58 Million. In November 2020 Merck, a German Pharmaceutical company, and VelosBio have entered a definitive agreement under which Merck will acquire all outstanding shares of VelosBio for \$2.75 billion in cash, though a subsidiary. Pappas Capital, the collaborator of Chiesi Ventures affirmed that the exit was one of the most successful in its 25-plus-year history.

Other investments for Chiesi Ventures are:

- AuraBiosciences, a biotechnology company that develop drugs by using tumor targeted Viral-like Nanoparticles.
- Sentien, a late preclinical stage company developing novel approaches to cell therapy.
- Minoryx Therapeutics, a company that develop innovative treatments for Inborn Errors of Metabolism.
- Reneo, biotechnology company focused on the identification and development of novel treatments for orphan diseases.
- Mirum Pharmaceuticals, that is developing a compound to treat genetic liver disorders that affect primarily children. Chiesi exited the investment with Mirum's IPO in 2019.
- CuraSen Therapeutics, focused on the discovery and development of therapies to treat neurodegenerative diseases, including Parkinson and Alzheimer.

- Kezar Life Sciences, a biopharmaceutical company focused on the discovery and development of novel small molecule therapeutics that target protein homeostasis. Chiesi exited the investment with Kezar's IPO in 2018.

### **3.8.1. Insights**

Chiesi Ventures similarly to UniCredit EVO created its corporate venturing subsidiary in collaboration with a VC, Pappas Capital, already active with investments in the sector in which the company operates. The strategic collaboration allows Chiesi Venture to leverage Pappas Capital's expertise and network to access and assess deals and opportunities, lead investments and manage transactions. The deal has the same rationale of the syndication of investments that allows to select better investments thanks to reciprocal approval of more entities, and the learning process derived from being part of a VC's network.

Although the joint venture with the VC, the investments of Chiesi Ventures seem to be quite strategic. Chiesi Ventures report in its website that it wants to complement the strategic interest of Chiesi Group by investing in early stage companies focused specifically on the field of rare diseases but with complementary capabilities and missions with the final aim of improving quality of diagnosis, disease management, care and therapy to all patients affected by rare diseases. Another strategic aim is to accelerate the expansion network of Chiesi in the US, most of the investments are in fact in American companies.

The portfolio of companies is diversified but in a related way. Each portfolio company study and solve a different aspect of the therapy or different rare diseases, however, each company belongs to the same sector. For the literature, if the portfolio company's sector is closely related to the CVC parent's sector, the learning potential is low and do not allow to open a window on new technologies and markets that may be far from the core business of the CVC parent. For Chiesi it would seem so, given that of the four areas of specialization of the company (respiratory, neonatal, special care, rare diseases) one coincides with the investment area of the CVC (rare diseases). However, in the case of Chiesi, the rare disease sector is so large and there is so much still to research, that the premise does not hold. It is estimated that 6,000 on 7,000 rare diseases have been diagnosed so far, the average time to get to an accurate diagnosis is from 6 to 8 years, and the 95% of all rare diseases do not have a single FDA (Food and Drug Administration) approved drug treatment. The goal of Chiesi Ventures is to invest in promising start-ups that provide services and treatments for rare diseases hoping that that one day every rare disease will be diagnosed rapidly and will have a cure. It is not explained by Chiesi how and if Open innovation has been applied with the portfolio companies, however, being in the

same sector, the learning could be very deep and discoveries from other companies may be beneficial and may be applied also by Chiesi in the same or in other contexts.

*Table 18 - Investments of Chiesi Ventures*

STARTUP	WHAT DOES IT DO?	STAGED	SYNDICATED
Glycomine	Develops therapies for critical unmet orphan diseases of glycosylation that can cause malfunction of multiple organ systems	Yes, two stages	Yes
4D Molecular Therapeutics	Develops novel adeno-associated virus (AAV) vectors to unlock the full potential of gene therapy	Yes, two stages	Yes
VelosBio	Oncology focused company which develops novel antibody-drug conjugates to treat haematological cancers	No	Yes
AuraBiosciences	Biotechnology company that develops drugs by using tumor targeted Viral-like Nanoparticles	Yes, two stages	Yes
Sentien	Late preclinical stage company developing novel approaches to cell therapy	No	Yes
Minoryx Therapeutics	Develops innovative treatments for Inborn Errors of Metabolism	Yes, two stages	Yes
Reneo	Identifies and develops novel treatments for orphan diseases	Yes, two stages	Yes
Mirum Pharmaceuticals	Develops a compound to treat genetic liver disorders that affect primarily children	No	Yes
CuraSen Therapeutics	Develops therapies to treat neurodegenerative diseases	No	Yes
Kezar Life Sciences	Develops novel small molecule therapeutics that target protein homeostasis	No	Yes

*Table 19 - Characteristics of Chiesi Ventures*

Strategic/Financial motivations	Strategic and financial
Syndication	Each investment syndicated
Staging	Five staged investments
Diversification of investments	Related diversification
Open Innovation	Not applied
Other	Created in partnership with a VC already active in rare diseases sector

## SUMMARY OF RESULTS AND CONCLUSION

This thesis aims to analyse the phenomenon of CVC and how it can be used as a way to keep pace with innovation and create value inside of the company.

In the first part of this work, the literature on CVC was reviewed to shed light on different aspects of CVC such as its conformation, objectives, governance, and investment practices. Next, we analysed the value creation process for the CVC, from the creation of the portfolio to the application of Open Innovation, the value creation for the target firm and some comparison between CVC and IVC, and between CVC and acquisitions. In the last part of this work, it has been performed an analysis of eight Italian CVCs to highlight some trends in the national CVC scenario and to show, regarding the creation of value, how the investment portfolio is organized and how some investments are integrated within the company's business model with a view to Open Innovation.

In this section, we will present the results of the case-study comparisons and then we will offer some concluding thoughts.

Regarding the trends, the first thing that noticed through the comparison of those cases is the tendency toward **syndication of the investments** with other investors. Four of the CVCs examined (TIM Ventures, UniCredit EVO, Ad4Ventures, Chiesi Ventures) syndicated most of their investments, while the other four syndicated some or at least 1 investment. The results are consistent with the literature, which affirms that the majority (four out of five) of corporate investors syndicate at least some of their investment (Anokhin et al, 2011). The syndication of investors creates a sort of reciprocal approval of an investment, leading to superior target selection and allowing the CVC to create a network.

Similar motivations have guided another particularity observed in the case analysis: that is, the creation of the CVC fund in **partnership or collaboration with other VCs**, incubators, and accelerators. For, instance, both UniCredit and Chiesi created their CVC arm in partnership with a VC already active in the sector in which they intended to invest to take advantage of the VC's experience in accessing, evaluating, and management of investment opportunities. Similarly, A2A Horizon was created in collaboration with more partners: a VC fund, 360 Capital, and the University Politecnico di Milano's Poli 360 fund, its Technology transfer Office, and Polihub incubator. Reale Group instead adopted a different approach by investing alone but consolidating its networks with VC funds, incubators, and accelerators that share the same research framework for start-up sourcing, in order to increase the probability of being informed of interesting investment possibilities.

**Staging of investment** is a practice we observed to a lesser extent in the cases under examination. The method is used to overcome investment uncertainty related to start-ups by beginning with a smaller amount of capital commitment and later evaluating whether it may be necessary to reinforce the investment with other capital. It follows that only the best startups will receive a second or a third round of financing from the same investor. In our cases, only TIM Ventures, Ad4Ventures, Neva Finventures, and Chiesi Ventures staged some of their investments. However, it is necessary to say that among the CVCs that did not stage investments, there is a very young one, A2A, which was created in 2019 and therefore probably has not had yet the opportunity to evaluate whether and which investments to reinforce, and there is a CVC, Sella Ventures, which made just two investments, one of which exited in around six months and the other was just before the fund structure changed to become something different from a CVC.

Another fact emerged in the analysis of the CVC trends in Italy is the propensity by banks and Assurances to also **invest in VC funds to indirectly invest in startups**. This kind of investment has mostly a financial objective but may also have a small strategic component such as learning from the VC; starting to probe a new geographic market (as in the case of Reale Group); exploiting industrial synergies with the activities of the VC; and possible complementarities with other digital initiatives, as explained by Neva Finventures.

Sella Ventures also implements this strategy of investing in VC funds but does it in a different way. In fact, Sella abandoned its CVC project in May 2019 and transformed it into an Asset Management company (SGR), intending to create the first fund of VC funds. The change of legal form, from “SPA” to “SGR”, to attract capital from other investors, is also being implemented by Neva Finventures. The latter has stated that this change will be followed by an increase in the investment plafond and a change in the investment focus, which will no longer be just fintech but all fields of technological innovation. It is unclear whether Neva will remain a CVC and whether the fund’s objective will remain strategic or shift to a more financial focus.

Regarding **value creation**, the first thing we tried to analyse in our case studies was the objective of the CVC fund, particularly the distinction between purely financial or potentially strategic objectives. We can start by saying that all CVC investments must consider the financial factor, since if the firm loses money, it is not a good investment. However, having also a strategic objective can lead to major value creation, since lower short-term returns can be acceptable if the investment’s strategic value is such that it will create greater value in the long run.

Returning to our case studies, we found just one CVC that focuses on **financial returns** alone: Ad4Ventures. From the literature, it is not convenient to start a CVC program just for financial returns since other forms of investment (such as investment in VC funds, pension funds, or other instruments) are less costly, less risky, and financially more attractive (Ernst et al, 2005; Yang, 2006). The reason why Mediaset still wants to follow this path with its CVC probably lies in the fact that it does not invest capital directly but offers its advertising services in exchange for equity, thus making the investment less expensive. Their contribution can also lend a hand in terms of visibility for the companies they support, which would potentially result in higher returns. Ad4Ventures acts more like a simple VC rather than a CVC. Similar to CVCs, its investments are just minority stakes; unlike CVCs, its investments are nowhere near compatible with the business of Mediaset; moreover, it is stated among their investment criteria the willingness to earn a minimum IRR and to have a clear path to exit. Mediaset had the highest number of successful exits compared to the other CVCs in question, which signals a greater propensity to seek financial returns.

The other CVC in our analysis seems, to a greater or lesser extent, to also have a **strategic focus**. We were able to note when looking at the differentiation of the investment portfolio that CVCs with a strategic focus presented a differentiation more related to the parent company's business (or at least complementary to it) compared to Ad4Ventures, which presents an unrelated differentiation. Specifically, the portfolios of UniCredit EVO, A2A Horizon, Neva Finventures, and Chiesi Ventures presented a related differentiation, with investments only in the sector in which the parent operates. The portfolio of Sella Ventures presented one related and one unrelated investment, and the portfolio of Reale Group Corporate Ventures presents both related investments in the insurtech sector and unrelated investments in complementary services like customer service. Finally, the portfolio of TIM Ventures presents unrelated diversification that however can help TIM in other parts of its business.

The literature asserts that portfolios of companies with little industry diversification and which are moderately related to the corporate investor permit more in-depth learning; however, if the portfolio is closely related to the CVC parent, the learning potential is low. Moreover, CVC is seen as a strategic tool to open a window on new technologies and markets that may be far from the core business of the CVC parent, so small and related diversification can be detrimental to the variety of innovative ideas. We argue that an overly unrelated diversification may be difficult to manage and make the process of applying innovation to the investor's core business more difficult. Furthermore, we argue that related investments allow the implementation of new ideas and technologies, which is demonstrated in our multiple case study by the ease of implementation of **Open Innovation** models in the CVCs that chose to implement a related or

a moderately related diversification model. It is precisely innovation and strategic benefits that legitimize the practice of CVC. If the returns were solely financial, the parent company could have directly invested in VCs or other instruments. This is why Open Innovation and its application are an important part of this thesis.

In our multiple case study, five out of eight companies have announced that they have implemented Open Innovation through their CVC program and, considering that Ad4Ventures has just financial objective and Sella's portfolio consisted of just two investments, this is a good percentage. Among these CVCs there are TIM Ventures, UniCredit EVO, A2A Horizon, Neva Finventures, and Reale Group Corporate Ventures. Each one of them has applied Open Innovation in different ways, sometimes to innovate a process allowing to reduce waste and save money, sometimes to offer a new type of service to clients, and sometimes to improve existing services. The thing they have in common remains the fact that Open Innovation is used to outsource a part of the R&D process instead of doing it internally, which may be much more limited in terms of ideas and much more costly.

However, the transition from the acquisition of a stake in a startup to the application of innovation is not easy. There must be an adequate integration system to fully exploit the value of the opportunity. In this sense it can help to insert the CVC program inside of the business unit that deals with innovation for a more fluid and properly managed integration as it has been done by Neva Finventure, which is part of the Intesa Sanpaolo Innovation Centre.

We have also noticed a tendency by companies to accompany the CVC program – a more structured and heavy initiative – with other Open Innovation initiatives that can be useful for building an initial relationship within the startup ecosystem. Sometimes, like in the case of TIM WCAP, this can help the company find talent that will then be financed by the CVC.

To conclude, among the Italian cases under analysis – excluding the case of the Sella Ventures failure – we can say that CVCs seem to achieve their goal of obtaining a new source of income and at the same time an opportunity to learn and to innovate.

To obtain more precise results, we may have to wait. Although financial value creation may be easier to assess, value creation deriving from innovation is not straightforward and may unfold over a long time. Furthermore, many innovations we have had the opportunity to observe in the CVCs in question are not disruptive innovations; rather, they are incremental innovations that can lead to radical change but take longer.

In any case, the lack of quantitative data on the performance of these funds is a limitation of this dissertation, so a more quantitative analysis to verify whether it is already possible to see

some differences in terms of value creation by companies that use and do not use this tool could be an idea for further research.

Further studies may also try to find a metric to quantify the strategic benefits of CVC investment or investigate the reasons why this phenomenon, which could be a strategic springboard for innovation and business value creation, is so limited in Europe and particularly Italy.

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