CHAPTER 5

The Financing of the Startup Life Cycle

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5.1 Introduction

This chapter presents the main funding sources used by Brazilian startups, by addressing definitions, investment processes and challenges that need to be overcome in order to stimulate innovation and entrepreneurship in Brazil. In addition, we describe some case studies involving Brazilian startups that used financing provided by venture capital investors in order to expand their activities of creating disruptive innovation and affecting society.

This chapter brings practical contributions for entrepreneurs and researchers. To know the differences among funding sources is extremely important for entrepreneurs to make decisions about which type of capital is the best option to finance each stage of the startup life cycle. Additionally, the entrepreneur gets to know the process of investment of each of the funding sources.

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In this chapter, the funding sources are organized in two groups: venture capital and government financing. Venture capital consists of angel investment, venture capital, private equity and corporate venture capital; whereas government financing refers to any capital offered directly by federal, state, municipal government or any governmental agency. These sources of funding are complementary, because each one addresses a different stage of the life cycle of startups, which comprises six stages. The first stage consists of the creation of a startup, which usually originates from results achieved by basic or applied research developed at the university. This type of research is usually funded either by the university, by public financing agencies or by companies as a sunk cost.

Once some kind of knowledge with high potential to become a product or service for the market is identified, there is the need for capital to carry out tests, define the product, i.e. steps that will enable the development of an innovative product from the academic results. After product definition, the entrepreneur implements the third stage, which consists of testing the product in the market, where the necessary adjustments are made and a prototype is built, in order to achieve the most adequate product for meeting a specific market demand.

The second and third stages, which consist of the development of a viable product and prototype tests, respectively, are usually financed either by insider financing or bootstrapping. The insider financing option refers to financial resources used by the entrepreneur, such as his/her own capital, capital from friends or family, personal credit card financing and personal bank loans. Bootstrapping refers to techniques used by entrepreneurs that reduce the need for capital, such as the acquisition of used equipment instead of a new one, to borrow equipment for a short period of time, to employ relatives and friends with no market wages, or to run the business from home, among others. Winborg and Landström (2001) analyzed the behavior of entrepreneurs of small-sized companies that used capital to support internal operations; they identified more than thirty alternatives.

The fourth stage of the life cycle of a startup regards the attraction of the first customers and the beginning of revenue generation. In this particular stage, venture capitalists provide resources for startups by enabling their growth, taking part in the results in the long-term perspective of the business. The necessary capital to fulfill stages three and four

is, usually, provided by angel investors. Angel investors are described in detail in Sect. 5.2 of this chapter.

The fifth stage of the life cycle of a startup consists of investments in marketing and infrastructure, to provide the company the capacity to increase its production scale in order to meet a higher demand boosted by the investment in marketing. This stage demands a greater amount of capital, which is provided by other venture capitalists. Section 5.3 describes how the process of venture capital works. Another potential investor in the fifth stage is the corporate venture capitalist, which is an extension of the concept of venture capital. Section 5.5 describes this sort of investment.

The sixth stage of a startup consists of the expansion of its market at the national and international levels. To that end, the startup needs a larger amount of long-term capital that can be provided by a private equity company. The private equity investment is described in Sect. 5.4.

Therefore, it is possible to represent the funding sources according to each stage of the life cycle of startups, as presented in Fig. 5.1. The horizontal axis refers to the period of time starting on startup foundation. The vertical upper axis refers to the generation of revenue in the company, which occurs with the emergence of the first customers. From this

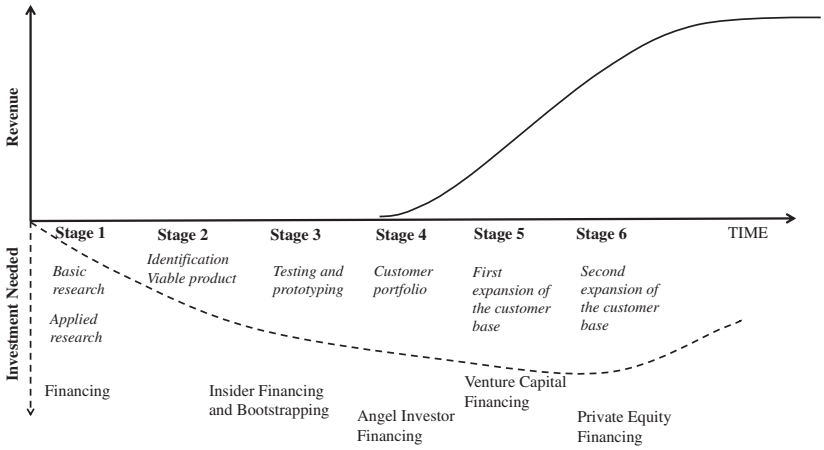

Fig. 5.1 Representation of the funding sources according to phases of the life cycle of startups

moment on, the company starts to attract attention of investors due to its ability to meet market demands. On the other hand, the need for capital occurs way before the first sale and it is represented by vertical lower axis.

5.2 Angel Investment

5.2.1 Definition

The pioneering research on the use of the term "angel investment" was the seminal paper published in 1983, "Angels and Informal Risk Capital", by William Wetzel. Angel investment is defined as "informal venture capital-equity investments and non-collateral forms of lending made by private individuals, using their own money, directly in unquoted companies in which they have no family connection" (Mason & Harrison, 2000). This definition excludes the investment made by friends and family of the entrepreneur, which are based on considerations and criteria different from those used by external investors (Mason & Harrison, 2000). That is, the angel investor is the one who has a high amount of capital and decides to invest a part of its assets in high-risk ventures with high potential returns.

Angel investors are usually professionals, executives or experienced entrepreneurs with a relevant network of relationships. Besides the financial investment, angel investors also invest their own knowledge into the new business by guiding new entrepreneurs and sharing their network of relationships to boost the growth of the company.

Considering that high-tech startups present high rates of mortality during their first years of operation, it is possible to realize that the risk associated to the investment in new technology companies is high and, for that reason, investors decide to invest only a small part of their assets in this sort of investment. The amount of capital invested can vary significantly, between R$ 50 thousand and R$ 500 thousand. In Brazil, the average amount of capital invested in companies is R$ 97.5 thousand (Hashimoto, 2014). In order to minimize the risk and increase the investment capacity, investors can organize themselves in groups or investment clubs to invest together, through participation in several companies. This diversifies risk by reducing investor portfolio risk, while developing culture and market infrastructure, thus stimulating angel investment.

Angel investors have several motivations; among them, it is worth mentioning the expressive potential financial return on the investment. In addition, angel investors have personal reasons that vary from one person to the other, such as: (i) to help the development of other enterprises through their personal experience, (ii) to be close to innovative businesses, and (iii) to interact with newborn businesses that present a synergy in their field of operation.

The investment accomplished by angel investors is also known as seed capital, because it is made in a stage where the company develops only one product, and has a small number of customers.

5.2.2 Investment Process

The investment process of an angel investor in the startup can be represented by five steps: the first step consists of the selection of startups of interest to the investor. Second, the investor identifies the company whose entrepreneur and business model fit his requirements, and sends the initial terms with the conditions for the investment, known as term sheet. Once the entrepreneur accepts these terms, the investor carries out a more complete evaluation of the business, considering technology, market potential, production process and buyers' decision process, an analysis known as due diligence. The fourth step consists of the negotiation of the contract that regulates the investment, regarding the investor's participation in the decision-making process of the company. The last step refers to the transfer of resources to the startup. The formalization of the investment can be done through convertible debt. In Brazil, angel investors take precedence over the formalization of the investment through convertible debt due to the risks that they are willing to assume, whereas the shareholder takes the risk of all decisions made by the entrepreneur in the startup company, including those prior to the capital injection by angel investors, such as tax and labor contingent liabilities.

5.2.3 Opportunities

The opportunities for angel investors in Brazil are related to (i) the cycle of the Brazilian market, (ii) high potential returns in this sort of investment, (iii) the unknown number of individuals that possess significant sums of capital, and (iv) the relevance of startups routine.

First, the Brazilian market is currently growing, which is a different situation from European countries that present mature but paralyzed economies. Thus, several venture capital funds, including angel investment, seek larger profits, especially by investing in emerging countries (Hashimoto, 2014).

The investment in early-stage businesses presents a high potential of return due to high risk. The uncertainties related to the investment involve the ability of the offered product to meet the demands of the market, the size of the potential market, the power to increase business scale, and the entrepreneur's ability to dedicate himself/herself to the business by improving the production cycle, sales and product delivery.

Additionally, even though there are more than 6300 angel investors with a potential investment of over R$ 500 million in Brazil, around 160,000 people in the country, with personal assets that are worth more than R$ 1 million, still do not consider this type of investment (Hashimoto, 2014). This fact can be a large opportunity for the growth of this sector in the near future.

Finally, although there are other types of risk investment, such as stock exchange, angel investment is the only kind that enables a direct participation in the business, which can expand the investor's networking while enabling a relevant daily routine in the new and fascinating universe of startups.

5.2.4 Challenges

On the other hand, the challenges associated with angel investment in Brazil can be enormous. Some of them are: (i) risk aversion by investors, (ii) lack of knowledge and specialization by entrepreneurs and investors, (iii) poor regulation, (iv) high taxation, (v) lack of public incentive, and (vi) bureaucratic complexity of the processes.

Initially, excess of precaution from the investor can hinder the development of the activity. Even though it is called risk investment, high risks are usually not well accepted by investors. Such apparent incoherence is due to the lack of investor's maturity in understanding the meaning of "taking risks", when analyzing a specific opportunity (Hashimoto, 2014).

Another challenge is the lack of experience of the entrepreneur, who does not know how to behave and present the project, does not know how to negotiate, does not show the necessary skills to manage the business, or does not have an entrepreneur profile. Therefore, the investor has no conditions to assess the real potential of the business and ends up by not making the investment. In addition to the lack of experience of the entrepreneur in the elaboration of proposals, both entrepreneur and investor are not aware of the legal restrictions related to this sort of investment.

Despite the relevance of the theme, only in 2016 Brazil created the first regulation for angel investment (LC 155/16), by including articles 61-A and 61-D in the Complementary Law No. 123/2006; and recently, the Federal Revenue Service launched the Normative Instruction No. 1719/2017, which established tax treatment.

Before the Complementary Law No. 155/16, the investor had an additional potential risk. Besides losing all the investment, he had to deal with the company's additional liabilities, even if he/she had no involvement in the company's management. With the current regulation, the resources provided by angel investors through the establishment of a contract do not make this investor a partner of the company where in which the resources were invested. Hence, the angel investor has neither voting right or management power in the business, nor is responsible for debts, including eventual receivership. Therefore, the regulation meets the wishes of investors that needed a distinct investment mechanism, without becoming partners.

The participation contract is hybrid, that is, it cannot be considered a simple loan, because there is the possibility of converting the investment into stocks, but the angel investor does not become a partner.

Although the Complementary Law represented an important advance for the sector, in July 2017 the Federal Revenue Service issued the Normative Instruction No. 1719/2017, which regards the taxation of operations related to angel investment, which caused an increase of investors' concern. According to such regulation, income from the investment is subject to taxation, calculated through the application of regressive tax rates, according to the period of validity of the participation contract:

i. 22.5% for participation contracts with a term up to 180 days;
ii. 20% for participation contracts with a term between 181 and 360 days;
iii. 17.5% for participation contracts with a term between 361 and 720 days; and
iv. 15% for participation contracts with a term above 720 days.

The regulation of angel investors in Brazil is very recent and has been much criticized, either because of excessive efforts to regulate the investment, or the lack of a beneficial tax treatment that effectively stimulates innovation. According to a decision from the Federal Revenue Service, angel investments are taxed equal to fixed investments.

It is very important that Brazil adopts policies that protect and stimulate angel investors. In several countries, such as the United State of America (USA), England, France and Portugal, there are policies related to the provision of tax incentives for angel investors, because governments understand that the higher the number of investments, the higher the creation of jobs and future tax payment.

5.2.5 Case Study: Buscapé

The case of the company Buscapé, founded by four newly graduated students from the University of São Paulo in 1999, with the support of an angel investor, is a successful example. The product developed by the company is a website that presents a portfolio of several companies, where the user can compare the price of a specific product at different online shops.

One year after its launch, Buscapé received some important investments. There were basically two contributions: US$ 500 thousand and US$ 6 million. With this money, the operation became profitable and an expansion process was carried out, which led to the opening of offices in Mexico, Argentina, Chile and Colombia. In 2005, the first angel investor of Buscapé sold his equity stake to a North-American fund, which later purchased BondFaro—a competitor of Buscapé—and merged the operations. With that, Buscapé became the largest price comparison online service in Latin America.

In 2009, the South African media conglomerate Naspers Limited, through its digital media channel (MIH Holdings), acquired 91% of

Buscapé for US$ 342 million. Naspers' portfolio relies on telecommunications companies, internet and entertainment in Africa, China, India, Eastern Europe and other parts of the world, besides a 30% stake of Editora Abril (Buscapecompany, 2018). In June 2018, Naspers hired the investment bank Citigroup to sell its Buscapé shares.

5.3 Venture Capital

5.3.1 Definition

Venture Capital consists of investing in companies that need capital to expand their client base and their products and services portfolio. It is used to finance capital expenditures to increase production capacity, marketing campaigns to promote its products and services, and working capital needs due to assets expansion. In this life cycle stage of a startup, entrepreneurs can no longer access government and corporate funding sources for research and development, and they have no business history, revenue stability and customers' portfolio to access bank credit lines or capital markets. These venture capital investors fill the gap of cash availability for startups to finance the creation of a customers' portfolio.

Venture capital investments are characterized by the acquisition of equity stake in the startup. Together with a Shareholder's Agreement, investors obtain the voting right in the company's management decisions, which ensures the transfer of managerial skills to the startup, while initiating the process of value creation. The managerial capacity of the investment fund is the result of its investment experience in other companies of the same industry, and its suppliers and customers' networks, which are worth more than the simple capital injection.

5.3.2 Investment Process

The investment process of venture capital in a startup starts with the constitution of the investment vehicle, which is usually an investment fund created exclusively to receive resources from investors and allocate them in startups through sharehold interesting or loan agreement. The initiative to create the investment fund is taken by an asset manager (asset management), who identifies a market opportunity in a specific market segment of a geographic region. Venture capital funds

define the market niche in which they want to invest. The asset management company is known as general partner of the investment fund, and is responsible for decision-making with regard to capital allocation; the investors are known as limited partners and are responsible for the provision of resources for the acquisition of corporate interest in startups. The investment process can be described in six stages (Fig. 5.2).

The first stage refers to the constitution of the investment vehicle by the general partners; the second involves the formalization of the investment commitment by the investor. The third stage consists of the selection of the startups that will receive the resources. The fourth refers to the transfer of resources to the startups. Usually, the investment fund manages a startup portfolio, which generates a synergy between the startups and contributes to the process of value creation, which refers to the fifth stage. In this stage, the general partner selects one executive with experience in the startup's area of operation in order to driver the company's management along with the entrepreneur, i.e. the founding partner of the startup. This is when value creation occurs, turning the startup into a company with a market value of millions or billions of dollars. Finally, the last stage refers to the investment redemption, by selling its equity stake and transferring financial resources to investors, also known as limited partners. In the situation where the process of value creation is successful, the sale of the fund's participation in the startup is enough to compensate the investor,

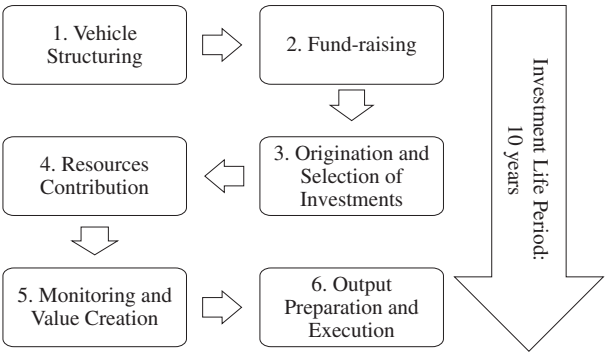

Fig. 5.2 Stages of the venture capital investment process

given the investment risk, and still repay the general partner with a stake of the investment performance. Besides the remuneration by performance, the general partner charges a management fee for selecting startups that receive capital contribution.

The six stages described are accomplished in approximately 10 years; during the first 2–3 years, the investment fund selects the invested companies; over five to seven years after the disbursement, the process of value creation is started in order to enable the investment redemption and ensure the investor cost of opportunity.

5.3.3 Opportunities and Challenges

Venture capital investments offer an opportunity to value the capital invested at higher rates of return than the average rates of the capital market. On the other hand, the risk of such investment is higher, since technological innovation already presents a risk, as well as entering new markets. Due to the higher risk, investors also require higher returns. The return rates demanded are between 40 and 60% per year, depending on the business segment, and the investment framework varies from 5 to 10 years (Titman & Martin, 2010). The main performance measure of venture capital funds is the multiple of exit obtained by the division of the redemption value and investment value of the investment.

$$Exit\ Multiple = \frac{Redemption\ Value}{Investment\ Value}$$

Considering the required rate of return of 40% per year and the investment period of 7 years, the expected multiple of exit should be 10 times as much as the capital invested. It is a huge challenge to achieve this rate of return, because it depends on potential market, capacity of strategy implementation, which depends on the entrepreneurs team, expertise of venture capital executives, and the period of time that the startup innovation represents a competitive advantage in the market.

Some studies aim to investigate the returns obtained by venture capital funds, whose returns are totally related to how the investment recovery is accomplished. For unsuccessful investments, redemption is done through the firm's liquidation, a case in which the venture capital fund can lose all the invested capital. For economically viable companies, however, which did not meet the goals defined by the manager during the

period of value creation, they can be sold to founding partners or other investors. In that case, the venture capital fund can recover the capital invested. For companies that met the goals and operate in business segments of interest to more mature companies, redemption can be carried out by selling shareholding participation to another company, an option known as strategic sales. Here, there is the possibility of return on capital at much higher rates. Finally, for companies that have a strong growth potential after the period of value creation, redemption is accomplished through the public listing of the invested company, which is known as Initial Public Offering (IPO). In this case, the returns obtained can be even higher when compared to strategic sales.

Das, Jagannathan, and Sarin (2003) used a sample of high risk investment funds of the North-American market, from 1980 to 2000, and identified that the average Exit Multiple of investment funds, which were focused on investing in companies in their first stage, was 10 times in the case of investments whose redemption were made by strategic sales. On the other side, in the case of redemptions made by the public listing of the invested company, the IPO, the Exit Multiple was 20 times.

In the Brazilian market, Minardi, Bortoluzo, and Moreira (2015) investigated the multiple of exit based on a sample obtained for the period between 1994 and 2012, and identified that the average Exit Multiple of venture capital funds was 2 times.

5.3.4 Case Study: Neon Bank

The investment fund Propel Venture Partners was created in 2017 with an investment of US$ 250 million from the Spanish bank Banco Bilbao Vizcaya Argentaria (BBVA), besides funds raised from other investors, and is located in San Francisco. The focus of the fund is on startups that operate with technology and finance. In 2018, Neon Bank, a fintech that delivers financial services, received a capital contribution of US$ 22 million. This investment enabled the bank to expand its technology team in order to launch new products. Neon Bank was founded in 2016 in the Cubo Itau's innovation hub with a business model that has no maintenance fees for checking accounts and all financial transactions are accomplished by cell phone, including for opening an account, which takes only five minutes. When using an iPhone, the user can transfer money via Siri by requesting the app to transfer the money to a beneficiary, who also has

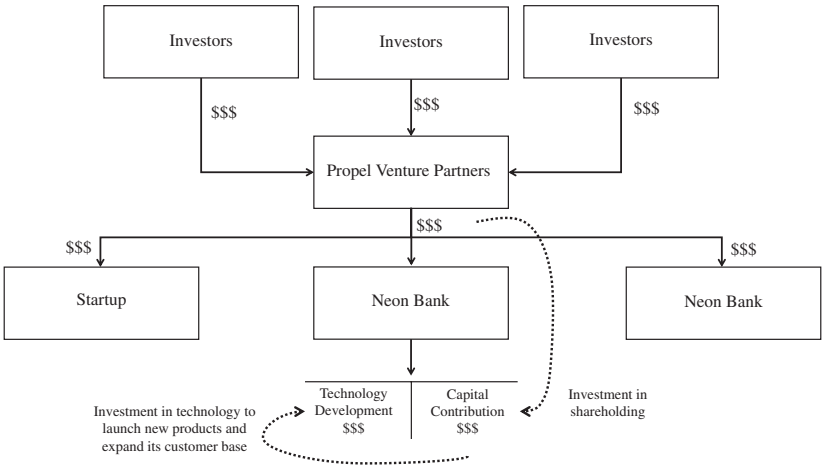

Fig. 5.3 Investment made by Propel Venture Partners

an account at Neon, through facial recognition, without the need to use pin codes. The investment made by Propel Venture Partners can be represented by Fig. 5.3.

5.4 Private Equity

5.4.1 Definiton

Private equity consists of investments in private companies that do not have access to capital market. Private equity means equity of privately held companies. It refers to the financing source for companies that have no access to investors because they are not listed on any stock exchange, but need capital due to its huge opportunities of growth.

Private equity is characterized by the acquisition of corporate interest in the invested company, assuming decision-making power. Therefore, the private equity investor believes that it will be possible to add value, depending on his/her management capacity, in order to extend client portfolio by offering commercial access to the other companies of the investment portfolio, and to expand the access to revenue sources due to the proximity with financial institutions. Hence, the invested company gets, in addition

to capital, non-financial resources that, together with the experience of the company's current managers, enable the accomplishment of growth objectives, increase of market share and launch of new products, for instance.

5.4.2 Investment Process

The private equity investment process in a privately held company starts with the establishment of the investment vehicle, which is usually an investment fund created exclusively to receive contributions from investors, and the allocation of these resources in the acquisition of equity stake in that company. The asset management company responsible for the creation of the fund designates a fund administrator, which is known as general partner of the investment fund. The administrator is responsible for decisions related to the allocation of capital, and investors are called limited partners, who provide resources for the acquisition of corporate interest in companies.

The process of private equity investment can be described through the following stages:

i. identification of an investment opportunity in a business segment, in a specific geographic region;
ii. establishment of an investment vehicle;
iii. fundraising from investors;
iv. investment selection: analysis of business models, business plans and identification of the potential market of the company that will receive the investment;
v. establishment of preliminary conditions for the investment in the selected company;
vi. accomplishment of preliminary due diligence;
vii. accomplishment of formal due diligence;
viii. negotiation of the documentation;
ix. agreement between the private equity fund and the company;
x. allocation of resources through the acquisition of equity stake;
xi. value creation process;
xii. redemption of investment.

These stages occur within approximately 5 years, which is a shorter time when compared to venture capital. This is due to the fact that the investment is made in relatively mature companies, which is different from early-stage companies funded by venture capital.

5.4.3 *Opportunities and Challenges*

Private equity investment funds are remunerated by the management fee to compensate for portfolio selection and monitoring costs. The average percentage charged by managers is 2% of the investment (Zeisberger, Prahl, & White, 2017). The private equity fund also charges a performance fee, called carried interest, which is based on the profits of an investment. The standard interest allocation is 20%, on average, of the net remuneration of the investment portfolio. The net result achieved by the final investor is, therefore, 80% of the general remuneration (Zeisberger et al., 2017).

There are several empirical studies on the returns demanded by private equity funds. In the American market, for instance, Gompers and Lerner (1998) identified that the rates of return amount to around 20 to 25% per year. This rate is lower than the interest demanded by venture capital due to a lower risk, considering that the investment is made in more mature and larger companies, which are institutions that present lower risks.

Ljungqvist & Richardson (2003) analyzed the returns obtained from 1980 and 1993 by 2199 private equity funds in the United States and the weighted average returns were 18% per year (return weighted by the volume of investment). Kaplan and Schoar (2005) identified that the average internal rates of return by 746 private equity funds, between 1980 and 2001, was 121% of the average rate of return of the capital market, which is measured by the S&P500 index. Harris, Jenkinson, and Kaplan (2014) used a sample of 598 private equity funds, and obtained the average internal rate of return, over the 1980s and 1990s, of approximately 18% per year, which validates the results found by other researchers. During the first decade of the 2000s, the average internal rate of return was 11% per year. This return shows an average rate over the capital market index of 3% per year, which indicates the remuneration for additional risk taken by private equity funds plus 3% per year.

5.4.4 *Case Study: Cruzeiro Do Sul Educacional*

Cruzeiro do Sul Educacional, founded in 1965, sold its equity stake to the private equity fund managed by the Brittish company Actis in 2012, receiving the amount of R$ 180 million for 37% of its capital. The capital was used to expand the group activities through acquisitions; in the year of the acquisition, the institution had 36,000

students, and in 2015 it had over 130,000 students. Besides financial resources, Actis transferred some knowledge in the area of educational management, due to some previous investments in this sector: acquisition of shares in the language school Cultural Norte Americano (CNA), and participation in the Chinese Educational Groups EIC and Ambow.

Actis sold its shares to GIC, the sovereign Singaporean fund, in 2017. Besides the 37% shares of Actis' participation, GIC acquired other 3% from other stockholders, and presently owns 40% of the group Cruzeiro do Sul for R$ 500 million.

5.5 Corporate Venture Capital

5.5.1 Definition

Corporate Venture Capital (CVC) are investment vehicles created by established companies to invest in startup firms to develop innovation in new businesses. This differs from research and development (R&D) investments made by established companies, since startup companies in their portfolio are not subject to investment policies and established procedures. The investment vehicle can be an investment fund or a company whose only purpose is to acquire equity stake in startups. The main purpose of the investing company is not only financial, as it happens with the venture capital investor, but strategic, because there is an interest in promoting innovation in the company's market of operation.

The interest of the investing company is either to access a new technology, enter a new market niche, or create entry barriers for potential competitors.

5.5.2 Investment Process

The investment process consists of the creation of the investment vehicle that, in Brazil, is an investment fund whose main purpose is to invest in startups that develop solutions in the company's same sector of activity. The goal of the investment fund is to manage a startup portfolio in order to create value, such as a venture capital or private equity fund. The difference is that capital redemption can be achieved through the sale of its shareholding participation to the investment vehicle's owner company, which is the corporate venture fund investor. Benson and Ziedonis

(2010) carried out a study in which they analyzed, between 1987 and 2003, a sample of 530 startup acquisitions; 89 startups were purchased by the corporate venture fund investor company.

5.5.3 Opportunities and Challenges

Corporate venture capital is an opportunity to develop innovation for large companies, because innovation is developed outside the company. In addition to the necessary capital for development and expansion, companies provide startups with the access to distribution channels, suppliers, technology, infrastructure for scale production, and customer services; it all depends on the complementarity between the startup and CVC parent company.

On the other hand, conflicts of interest between venture capital investments and startups go beyond the usual conflicts between investor and startup. In the case of corporate venture capital, there is the risk of competition between the startup and the company; potential acquisition of the startup by other competitors; the startup can compete for capital with other business units of CVC parent company; risk of technology expropriation by CVC parent company; access restrictions to funds held by competitors of CVC parent company.

According to such risks, one may doubt the feasibility of CVCs. Empirical studies investigated if the benefits overcome the CVCs risks and conflicts of interest. Gompers and Lerner (1998) analyzed 32,364 investments made between 1983 and 1994. Less than 5% were CVC investments, and the main results, considering that IPO is the most profitable exit option for venture capital investors, indicated that 30.6% of the investments in venture capital underwrote IPO, while 35.1% of the CVC investments underwrote IPO, which shows the superiority of CVCs. By selecting only CVCs with a strong strategic alignment with CVC parent company, it was possible to check that 39.1% of the investments underwrote IPO. On the other hand, write-off is the exit that results in the worst performance for the venture capital investor: 18.7% of the independent venture capital fund investments were liquidated, against 14.6% of the corporate venture capital investments. By selecting only CVCs with a strong strategic alignment with CVC parent company, they found that 14.3% were terminated.

Dushnitsky and Lenox (2006) used a sample of 1173 US public companies, from 1990 to 1999, and identified that 171 held a CVC investment vehicle. The authors analyzed the relationship between investment in CVC and the dependent Tobin's Q variable, which refers to a value creation measurement: the higher the ratio, the higher the value of the company perceived by investors. The independent variable is the amount of investment in CVC (besides the control variables). The result of the analysis confirms the positive and statistically significant relationship between the variable "investment in CVC" and Tobin's Q. It indicates that companies that invest in CVC are more valuable than companies that do not.

Finally, literature mentions CVCs' successful factors. Park & Steensma (2012), Siegel, Siegel, and MacMillan (1988), and Sykes (1990) identified that value creation is associated with the synergy between the startup and the CVC parent company. When there is synergy, the strategic value of the startup for CVC parent company occurs through:

i. new business opportunities;
ii. new business partners;
iii. new acquisition opportunities;
iv. change in the corporate culture.

The investment vehicle must be structured taking into account the autonomy of the investing company in decision-making processes. For instance:

i. The startup must have access to capital, regardless of the budget of the business units of CVC parent company.
ii. CVC must be an entity independent from CVC parent company, with its own remuneration policies and independent investments.
iii. CVC must be managed by a professional of the venture capital industry, with participation of managers of CVC parent company, in order to identify and benefit from synergies. For this purpose, it is necessary to establish a communication flow between CVC parent company and the startup, regarding issues of mutual interest.

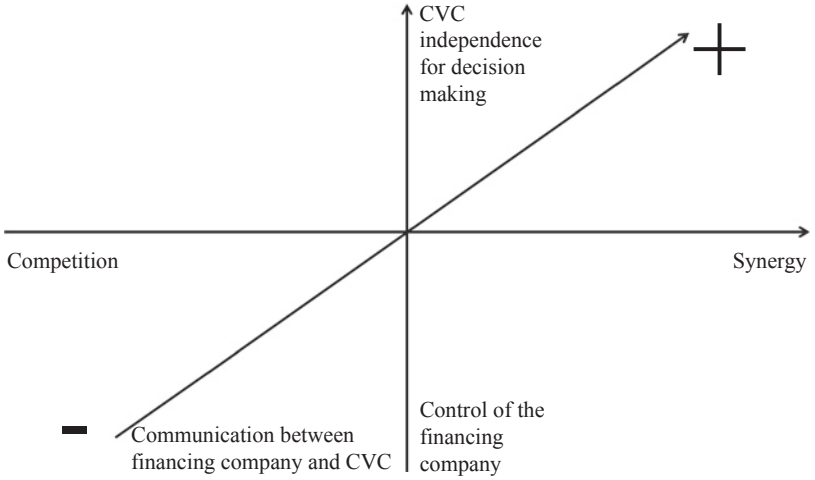

Fig. 5.4 Performance of the CVC fund according to the degree of competition or complementarity of the startups' businesses

Based on these studies Fig. 5.4 shows the performance of the CVC fund, according to the degree of competition or complementarity of the startups' businesses, the degree of independence and the degree of communication between the startup and CVC parent company.

5.5.4 Case Study of Corporate Venture Capital in Brazil

M12, formerly Microsoft Venture, is a corporate venture capital subsidiary of Microsoft, and launched the investment fund BR Startups in 2013. This multicorporate investment fund, which received investments from Qualcomm, Monsanto Group, Banco do Brasil Security, Algar, Votorantim Bank, ES Ventures (Espírito Santo Ventures) and State Development Agency of Rio de Janeiro (AGE RIO), in order to invest in newborn companies, is managed by MSW Capital, which was founded in 1999 by Professor Moises Swirski, PhD in Finance by Stern School of Business.

The areas of interest of BR Startups are: cloud systems, agritech, fintech, insurtech, edtech, digital health, telecom, information and communication technology (ICT), tourism, renewable energy, urban mobility, smart cities, productivity, internet of things and public security.

In December 2017, BR Startups made an investment of R$ 1 million on the startup QueroQuitar, an online fintech for debt settlement and financial education that already helped around 280 thousand people to handle their financial situation. Since 2015, QueroQuitar works as a marketplace platform that operates as a real online negotiation table between debtors and creditors, which aims at preserving a good relationship between the company and its customers. Today there are more than 3 million debtors registered in the database, and also financial credit institutions, such as Santander, Bradesco, Porto Seguro, Caixa Econômica Federal, Tribanco, MRV Engenharia, Sofisa, FortBrasil, Riachuelo, Alphaville e Credz.

5.6 Government Financing

5.6.1 Definition

As mentioned before, venture capital is the main source of the financial market for funding innovation. However, such source requires the existence of a stable capital market for the consolidation of the investment process. In Brazil, the lack of private venture capital funds made public institutions vital elements for the promotion of technology-based companies (Cherobim, Mendonça, Woehl, & Nascimento, 2011).

In this perspective, since the end of the 1990s, Brazil has promoted deep political reforms to support technological innovation and micro and small-sized companies. Several programs for financial support have been implemented by public technology funding agencies. Today, the legislation that supports science, technology and innovation is composed mainly by sectorial funds of science and technology and by the Innovation Law, followed by other legal mechanisms (Morais, 2008).

The sectorial funds were created in 1999 thanks to a solid work developed by the currently named Ministry of Science, Technology, Innovations and Communications (MCTIC) (Salerno & Kubota, 2008). There are 16 sectorial funds, from which 14 regard specific sectors and 2 are cross-sectional: one stimulates the interaction between universities

and companies (Green-Yellow Fund, FVA in Portuguese), and the other is directed to the improvement of science, technology and innovation structure (Luna, Moreira, & Gonçalves, 2008). The financial resources of sectorial funds are managed by the Financing Agency for Innovation and Research (FINEP), which is the executive office of the funds, and the National Council for the Development of Science and Technology (CNPq). The main objectives of the sectorial funds are: (i) to ensure the expansion and stability of financial resources for R&D; (ii) to boost private investments in research and innovation; (iii) to foster partnerships between universities, research institutions and the production sector; and (iv) to guarantee the continuity of R&D investment in the private sector (Morais, 2008).

The Innovation Law (Law No. 10973/2004) was the milestone that created the framework for financial support through direct economic grants to companies, in order to develop innovative products or processes (Maçaneiro & Cherobim, 2011).

5.6.2 Investment Process

With the emergence of the Innovation Law and sectorial funds, several government programs were created in order to boost the development of innovation in the country. These programs comprise five large promotion strategies: (i) subsidized resources (non-refundable); (ii) traditional funding investments with special terms and fees, which are lower than those found in the financial market (refundable resources); (iii) government support for using venture capital and private equity; (iv) tax incentives; and (v) technological and managerial support.

The financial resources of the first three items are provided by institutions of the federal and state governments, and are managed by funding agencies, which handle the process (Maçaneiro & Cherobim, 2011). Companies compete for these resources in order to develop their technological projects (Salerno & Kubota, 2008).

At the country level, FINEP is the main institution that funds R&D projects in companies. At the state level, Foundations for Research Support (FAPs) sometimes play the same role in specific niches, many times through a partnership with FINEP (Salerno & Kubota, 2008).

It is important to mention that a defined percentage of the budgetary resources of the federal government for subsidy is directed to micro and small-sized companies. In order to ensure that these

resources reach these companies, the Innovation Law defined that FINEP should establish agreements and to accredit regional, state and local funding agencies, besides defining simplified procedures for the submission of projects by micro and small-sized companies (Morais, 2008).

We present the main public institutions that elaborate public notices for innovative companies to submit projects in search for financial support:

i. National Council for Scientific and Technological Development (CNPq). The main purpose of CNPq, which was founded in 1951, is to promote scientific and technological research and improve the educational background of Brazilian researchers in all knowledge areas. Today, the main entrepreneurial support of the institution is the Education Program of Human Resources in Strategic Areas (RHAE), created in 1987, to boost the insertion of researchers (masters and doctors) in micro, small and medium-sized companies (CNPq, 2015). This is an essential support, especially for confronting one of the main risk factors of funding innovation: the high investment in skilled labor for the development of new products and technological processes (Hall, 2002).
ii. Foundations for Research Support (FAPs). These are agencies that promote science and technology at the state level. They are associated with MCTIC and work as mediators between research institutions and universities and public and private companies in technical cooperation activities and service rendering, besides providing resources through government programs (ANPEI, 2009).
iii. Financing Agency for Innnovation and Research (FINEP). It is also a federal agency that supports innovation and technological development, founded in 1967. Its main objective is to encourage the development of technological research in domestic companies (Maçaneiro & Cherobim, 2011) in several ways, such as: (i) non-refundable resources (economic subsidy), (ii) refundable loans with different terms of payment, and (iii) venture capital, in which it participates as partner of the firm. Depending on the type of company, the technological relevance of the project and the level of innovation and risk, credit alternatives offered to companies can be combined through different programs. Such combination of funding instruments is much appropriate for micro and

small-sized companies. Therefore, by combining refundable and non-refundable resources, FINEP can foster essential activities for the increase of competitiveness in the Brazilian corporate sector (FINEP, 2015).

iv. Brazilian Service for Support of Micro and Small Firms (SEBRAE). Created in 1972, it is an institution that prepares micro and small companies to achieve the necessary conditions to compete and grow (SEBRAE, 2014). It has developed the program Startup SP, to increase the opportunities for innovation in startup companies. The program for the development of digital startups in the state of São Paulo focuses on startups that need to validate the main assumptions of their business models. The program lasts 4 months and offers training, business monitoring and mentoring with partners from the market and from the startup ecosystem. It happens twice a year, and the first event took place during the first semester of 2017. In 2018, SEBRAE intended to invest around R$ 45 million in startups through investment funds; such initiative was called "Capitalizing innovative companies". The main purpose of this project is to facilitate access to business capital through application in investment funds; the support is directed to small innovative firms with high growth potential (SEBRAE, 2018).

v. National Bank for Economic and Social Development (BNDES). It is an institution associated with the new Ministry of Economy, and is the main agency for long-term funding in every segment, and offers special conditions for micro, small and medium-sized companies (BNDES, 2018). It supports companies through the provision of funding and investments, subscription of securities, provision of collateral, and non-refundable resources. The bank provides products, programs and funds, according to the modality and characteristic of the operations. Some specific examples of funding programs for innovation are: (i) BNDES Finem, (ii) BNDES Funtec, (iii) Fundo Clima (Climate Fund), (iv) Inova Mineral, and (v) Plano Inova Empresa. Still, the strongest focus of BNDES is on refundable financing. The bank has some difficulty—which is a characteristic of the banking system—to fund innovation projects in newborn companies, since these projects present higher risks and only a few real securities.

5.6.3 Opportunities and Challenges

The Brazilian government funding mechanisms for innovation present several obstacles to overcome. Some of these challenges are related to the budget available for research and development of projects, which also includes the qualification of skilled researchers in order to accomplish innovation. Since 2014, the public budget for research has decreased, due to the political crisis that the country has faced lately, together with the increase of the public debt.

In addition, first-time entrepreneurs often do not know about these alternative sources of funding, neither have the expertise to develop projects for submitting to financing agencies.

5.7 Conclusion

One of the greatest challenges for the entrepreneur to deal with is capital restriction while he/she identifies investment opportunities of high return. This chapter presents several options of venture capital, since the access to this sort of funding implies the sale of equity stake and giving up decision power over the business. If the entrepreneur is not willing to waive equity stake, he/she has access to funding capital, bootstrapping and insider financing, which meet the need for resources. However, as the business expands and the demand for capital increases, the entrepreneur will have to deal with this conflict—access to capital and sharing decision-making. The purpose of this chapter was to present and discuss the main funding sources used by startups, investment processes and challenges that need to be overcome in the Brazilian context. Thus, entrepreneurs can identify the best funding source according to the startup's level of maturity, and understand the different contracting processes, depending on the investor.

The chapter also presents contributions for practitioners, i.e. managers of incubators and science parks, which will help them guide entrepreneurs in decision-making processes related to getting capital. The private sector, which consists of large corporations, can take the lead and encourage companies in a specific stage of their life cycle to get new technology partners.

Finally, the challenges of each source of capital can lead government officials to develop public policies in order to optimize the use of such sources. Therefore, it will be possible to leverage the development of

innovative companies, either by increasing life expectancy of startups or promoting the growth of mature companies in the market. As a result, such actions can bring positive externalities to the country, through the creation of high quality jobs and the increase of innovation indicators.

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