The Importance of Intellectual Property Assets in Venture Capital Transactions

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1. INTRODUCTION

The society of the 21\textsuperscript{st} Century is the society of knowledge, creativity and innovation. Ventures of entrepreneurial individuals who “think different”, dare to deviate from the beaten paths and build on fresh ideas are replacing the old and rigid international conglomerates of the post-industrial capitalism and are becoming a driving force of technological development and economic growth. The greatest assets of these rapidly growing and highly risky business ventures – commonly referred to as the “start-up companies” – are the knowledge of their people and the creative minds that, when put together in a fertile environment, cook up innovative products that change the way we see and do things in our daily lives.

Such supportive environment, however, does not come by itself; in fact, several different factors must come together. Among those, the basic precondition is that a society recognizes entrepreneurship as a common value and promotes it as such. As a natural consequence, the legislator and the government will strive to create a regulatory framework in which creativity can be fostered and knowledge efficiently disseminated.

Allow me to stop here for a moment and pose a question: is creation of an environment in which bold ideas flourish and knowledge is abundant really a sufficient condition for development of start-up companies with ground-breaking technological projects that change or will change our lives (think only of Apple, Tesla Motors and Google)? I believe the answer is no. If nothing else, such entrepreneurial projects are from the earliest stages on in great need of fresh financial resources that the entrepreneurs cannot provide themselves, and the banks are not willing to provide due to the risks involved. To address the issue of financing entrepreneurial projects with high levels of risk, an institute of venture capital financing has been developed.

As I describe in the following pages, venture capital financing represents a way of allocating the available private capital to those economic entities that have no access to debt capital markets due to the risks they bear.\textsuperscript{1} European Private Equity & Venture Capital Association (hereinafter, “EVCA”) defines venture capital as “a subset of private equity and refers to equity investments made for the launch, early development, or expansion of a business. It has a particular emphasis on entrepreneurial undertakings rather than on mature businesses.”\textsuperscript{2} Venture capital financiers search for dynamic start-ups with innovative products and cutting-edge technologies

\textsuperscript{1} Bergoc, 2012, p. 12
\textsuperscript{2} EVCA, 2007, p. 6
with a sustainable competitive advantage and high market potential. To elaborate, venture capital financiers expose their money, time and energy only if the key product of a start-up company represents an innovation that is eligible for industrial application and is commercially exploitable, and if the product allows its inventor to sustain advantage on the market for a period long enough to capture the profits created.

Sustaining an advantage with an innovative product is one of the crucial conditions for obtaining venture capital financing. However, in a global market with fierce competition this becomes impossible, and financial returns on venture capitalists’ investments elusive, therefore no investments are made. To sum up: in a liberal economic environment where ideas can thrive and financial resources for strong projects are waiting to be invested, no start-up company can actually be developed. What else are we missing?

There are probably numerous right answers to the question, but I only deem one particularly adequate: we are missing the possibility of intellectual property protection. Intellectual property is a concept that refers to creations of one’s intellectual activity and grants special rights on the said creations. Intellectual property rights protect their holders, give them exclusive rights over the protected products, works, art etc., and offer them an opportunity to capitalize on these inventions, products, and ideas, because the competitive market players are excluded by law. The stronger the intellectual property protection, the easier the exclusion of others from enjoying the commercial potential of company’s key innovation. “Various market mechanisms play a central role in technology diffusion. This causes the innovation process to become more competitive, cooperative, globalized and foster new technology based enterprises and industries. To accommodate these factors, enterprises require more and robust intellectual property to stay globally competitive. OECD has shown positive changes in the legal and regulatory framework of patent regimes in US, EU, JP have resulted in the growth of patentable subject matter and more robust and valuable patents.”

Considering the above, intellectual property protection is of significant importance in venture capital transactions. It incentivizes investors to put their resources at risk and thereby enables value creation in rapidly growing technology-based companies. Strong intellectual property protection helps start-ups to sustain competitive advantage on the market by excluding other market participants from benefiting on the innovations. As stronger protection means less

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3 OECD, 2004, as cited in Cardullo, unknown, para. 11
4 Cardullo, unknown, para. 1
exposure to litigation and more predictability, intellectual property mitigates risks of entrepreneurial endeavor not being successful. Furthermore, active management of intellectual property portfolio may bring economic benefits to the company and the resulting strong intellectual property position may increase its value. In addition, intellectual property plays a role in company valuation for the needs of venture capital transactions. Not only are start-ups a risky business as such, but are also very hard to evaluate because they mostly hold intangible assets such as know-how, have no revenue track record, no final and no real clients. In light of this significant ambiguity venture capital investors face, the strength of the intellectual property position can be one of the few tangible indicators for calculating the potential of a company.\textsuperscript{5} It goes without saying that the valuation of a company importantly influences the final investment conditions.

"A recent survey of venture capitalists by a law firm on the relative importance of the factors that influence a venture capitalists investment decision revealed that intellectual property followed only management team, market opportunity, and technology and is as important as sales and marketing plans, and more important that financial projections and business plan.\textsuperscript{6}"

Some say, that from the day it is founded, a start-up should have an idea of its intellectual property strategy that will lead to a strong portfolio of intellectual property assets. The strategy and the portfolio – especially, but not only, the strength of patents and trade secrets – will be thoroughly scrutinized by venture capitalists when negotiating a transaction.\textsuperscript{7} Only a strong intellectual property strategy can allow start-ups to utilize their intellectual property assets so as to increase the revenues, and to block competitors from their present and potential future markets.

I light of the above, this master’s thesis strives to show that a growing technology-based enterprise can improve its position vis-à-vis venture capital financiers and directly influence the size and conditions of investment and increase its chances of commercial success (indicated by the successful exit of the investors) by addressing the question of intellectual property in an appropriate manner.

\textsuperscript{5} Dev, 2011, para. 1  
\textsuperscript{6} Fischer & Verni, 2004, para. 2  
\textsuperscript{7} ibid., para. 4 - 6
This thesis is structured as follows: in the beginning, I give an overview of both, venture capital and intellectual property with an aim to provide the reader with a basic theoretical background. In the following chapter four, I show the correlation between venture capital and intellectual property, and present the situations in which intellectual property can affect start-up’s standing in a venture capital transaction. In the end, I give my own view and understanding of the situation and present suggestions for closer cooperation between the said fields.
2. VENTURE CAPITAL

2.1 Meaning and Definition

Venture capital has become one of the generators of today’s economy, as it enables and fosters development of entrepreneurial ideas and innovation from the early beginning to the final realization and market commercialization.8 “The combination of research and development, intangible assets, negative earnings, uncertain prospects and absence of a proven track record, which are characteristic of start-up and pre-commercial initiatives, leads to an unacceptably high perception of risk for conventional financial institutions and debt financing. Venture capital addresses the consequent financing gap through equity participation.”9

There are at least as many definitions of venture capital as there are their authors. One of the founding fathers of venture capital financing, Georges Doriot, a professor at the Harvard Business School, defines venture capital as an investment process that involves the following elements: “First, new technology, new market concepts and new product application possibilities. Second, a significant, although not necessarily controlling, participation by the investors in the company’s management. Third, investment in ventures staffed by people of outstanding competence and integrity /…/. Fourth, products or processes, which have passed through at least the early prototype stage and are adequately protected by patents, copyrights or trade secret agreements /…/. Fifth, situations which show promise to mature within a few years to the point of an initial public offering or sale of the entire company (commonly referred to as the “exit strategy”). And finally, opportunities in which the venture capitalist can make a contribution beyond the capital dollars invested (the so-called “value added strategy”).”10

Similarly, Metrick and Yasuda lay down five distinctive characteristics of venture capital. First, venture capital is a form of intermediary financing, meaning, it takes money from high net worth individuals and institutional investors and makes an equity investment directly in growing start-ups. Second, venture capital is a type of private equity and is thus invested only in private companies; that is, companies that are not traded on a public exchange. Also, venture capital is “a category of alternative investing, where “alternative” stands in contrast to “traditional” investing in stocks and bonds.”11 Third, venture capital does primarily mean an equity investment in a start-up company; its comparative advantage over other types of investments,

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8 Bergoc, 2012, p. 12
9 Christofidis & Debante, 2001, p. 1
10 Bartlett, 1999, p. 3
11 Metrick & Yasuda, 2011, p. 5
however, stems from an ability to provide value-adding services in the form of active monitoring and supporting of portfolio companies (the so-called “smart capital”). Fourth, venture capital’s fundamental goal (and requirement at the same time) is to maximize the value of a portfolio company and to capitalize on the investment by exiting it through a sale or an initial public offering. And finally, venture capital is used to build new businesses, not to acquire existing ones, and it is thus said that venture capital focuses on the “internal growth of enterprises”.\textsuperscript{12}

“Venture capital investors concentrate in start-up firms and use their knowledge of industries and markets to evaluate and mentor entrepreneurs. The role of venture capital in this context is potentially very important. Their strong commitment to generate high returns in the medium term makes them active investors in portfolio companies. In particular, venture capital investors speed up product commercialization, the adoption of human-resource policies and they strengthen companies’ commercialization strategies. They can therefore “make the difference” by effectively directing portfolio companies’ strategies towards commercial success. Venture capital investors also provide “reputation capital” so as to attract top-fly executives or to obtain new contracts.”\textsuperscript{13}

“But venture capitalists are also demanding investors. For instance, they do not provide full financing upfront, but disburse money in installments at different stages of a firm’s development, contingent on the achievement of milestones such /…/. Venture capitalists are also found to closely oversee investee firms, and to be active board members who step in and take control when times get difficult. The combination of the “soft” and “hard” components of venture capitalists’ activity is widely seen to provide venture-backed start-ups with an advantage over others firms, since it should increase the chances of their survival.”\textsuperscript{14}

As indicated in the above definitions, venture capital investors target the so-called start-up companies. One of the best and most adequate definitions of a start-up I’ve ever seen was given by Eric Reis: “A start up is a human institutions designed to create a new product or service under conditions of extreme uncertainty.”\textsuperscript{15} The definition says nothing about the size and nature of the company, or the industry; rather, it emphasizes two elements that are immanent to each and every entrepreneurial endeavor: the creation of something new, and the conditions of extreme uncertainty. Venture capitalists support that “something new”, and

\textsuperscript{12} Metrick & Yasuda, 2011, p. 3 - 7
\textsuperscript{13} Bottazzi, 2009, p. 37
\textsuperscript{14} ibid., p. 37
\textsuperscript{15} Reis, 2011, p. 27
because of the “extreme uncertainty” demand extremely high returns that can be achieved only with rapid growth of the enterprise.

In the early days of venture capital when things were only starting to develop, the idea was that high net worth individuals step in to provide the capital necessary for developing an idea, discovery or invention of an entrepreneur with the lack of private funds and no access to debt financing due to the project’s risk. With the pass of time, however, venture capital became more and more popular and venture capital firms managing large amount of capital in the so-called venture capital funds and organized as partnerships were created and regulated.  

### 2.2 Venture Capital Firms

Venture capital firms are special financial institutions that consist of two legally separated units: a venture capital fund as an institutionalized form of venture capital, and a fund management company. Venture capital firms are recognized as financial intermediaries, because they seek available capital on the market on one side (they act as demanders) and supply the capital together with other services to a particular group of market participants on the other (they act as suppliers). Venture capital firms can be established for a limited or unlimited amount of time, while the funds are usually liquidated in ten to twelve years after their formation.

The prevalent legal form of organization of venture capital firms is limited partnership. Venture capital firms raise funds from either institutional investors, such as insurance companies, pension and other funds, endowments, corporations etc., or high net worth individuals; by contributing money to the fund, these investors become the so-called “limited partners”. “Typically, these funds raise equity at the time they are formed, and raise additional capital when investments are made.” “Gaining a reputation for having produced good returns is a key determinant of future successful fund-raising.” As shown in the Figure 1 below, investors participate in the fund with up to 99% of fund’s money, and are obliged to pay an annual management fee in an amount of two to three percent of fund’s funds. In exchange, they are entitled to receive back their initial investment and about 80% of proceeds; this must be paid to them as soon as possible upon the divestment.

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16 Christofidis & Debante, 2001, p. 6  
17 Bergoc, 2012, p. 25  
18 Botazzi, 2009, p. 36  
19 ibid., p. 36  
20 ibid., p. 36
Venture capital fund is managed by the management team whose job is to run day-to-day business for the venture capital firm and play an active role in portfolio companies’ management. They need to have a sufficient expertise in high-technology sectors their fund specializes in, and a good overview of the industries and future trends. They themselves also invest a smaller amount of their own money into the fund in order to give a positive signal to potential investors. Managers of a venture capital fund take the role of general partners in the limited partnership.

2.3 Relationship Between Entrepreneur and Venture Capitalist

One of the most important aspects of venture capital investments is the relationship between an investor, venture capital fund, and an investee, company and its founder(s). In supporting an early stage investment in a project that does not yet have a clear future, the venture capital investor accepts the risk the investee bears, but in exchange takes ownership over an equity stake in the invested company. “In doing so, venture capital investor agrees to no security for its investment and demands no interest payments”\(^2^2\); instead, it expects to achieve a high return on its investment by exiting the company after it reaches a certain stage in development. In the other side, entrepreneur as an investee must accept a loss of control proportional to the

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\(^{2^1}\) Botazzi, 2009, p. 36  
\(^{2^2}\) Christofidis & Debante, 2001, p. 8
venture capital investor’s equity participation, which normally does not exceed 30% of the share capital, and certain additionally imposed conditions on the control over the company. It goes without saying that any gains in the value of the company, when realized, are proportionally shared among the company’s owners. However, there is a positive side to obtaining a venture capital investment as well: the investee gets professional input in marketing, legal advice, business connections, managerial support, relations with suppliers and so on, as well as demands regarding strict financial discipline that increase the chances of investee’s success.\textsuperscript{23}

As the stronger party in the relationship, venture capitalist will always impose certain terms and conditions of the investment upon the entrepreneur. “Moral hazard in the relationship between the entrepreneurs and venture capitalists can be overcome by a careful allocation of rights.”\textsuperscript{24} Aside from negotiating on the company valuation and the amount of money invested, this “allocation of rights” is usually the toughest nut to crack before the deal can be sealed.

Venture capitalists as a general rule invest in a special type of preferred stock. “Over the years, a number of bells and whistles have been added to the preferred stock issued to venture capitalists.”\textsuperscript{25} Upon conversion of the stock due to the initial private offering or sale of the company those “bells and whistles” go away and do not impact other shareholders. However, if the entrepreneurial endeavor fails, there will be no conversion and venture capitalists will use their rights to decrease the loss. These rights are, but not limited to, the following: first, liquidation preference that entitles preferred shareholders to be repaid prior to the common shareholders in the event of liquidation; second, redemption rights that oblige the company to repurchase its own stock at any given time in the future; third, conversion rights that enable their holder to convert their preferred stock to common stocks at their election or upon the occurrence of certain events at any given time in the future; fourth, voting rights that work on an as-if-converted-to-common basis; and fifth, antidilution provisions that protect the existing venture capital investors from reducing their percentage in the company after subsequent financing rounds or other similar events (stock splits, stock dividends etc.).\textsuperscript{26} In addition, “venture capitalists will sometimes require the company to achieve certain goals (milestones) within a specific time. These milestones might include reaching certain stages in product

\textsuperscript{23} Christofidis & Debante, 2001, p. 8
\textsuperscript{24} Botazzi, 2009, p. 38
\textsuperscript{25} Bagley & Dauchy, 2008, p. 450
\textsuperscript{26} ibid., p. 450 - 470
development or attaining certain levels of sales or profitability.”

Reaching milestones is related to financing in stages that allows venture capitalists to keep the option of abandoning an ebbing company without incurring substantial losses.

2.4 Investment Process

Every process of attracting venture capital financing commences with the preparation of a business plan. “The business plan is the main tool used by the financial investors to evaluate the prospects of the business. Above all, it is the first point of contact with the investor.” Venture capital firms receive numerous business plans every day and they need to be screened. “Screening is normally a desk review by the investment manager of the entrepreneur’s or prospective investee’s company’s proposal /.../ and the investment manager’s judgment of the proposal’s potential for success.” If the proposal turns out to be interesting, presentations and meetings are held in order to discuss the business plan in more details, establish a good working atmosphere between the two sides, and obtain additional information. “Venture capitalists want to know where an invention or innovation fits in the marketplace with reference to existing and potential competitors. The potential investors also want to know if the innovation offers a dramatic and sustained advantage and whether is compelling evidence to warrant building a business based on this invention or innovation. They seek to evaluate both the strategy of an invention and the ability of an entrepreneur to motivate commercialization.”

If the first contact proves successful, negotiations about the possible investment begin and venture capitalist issues an initial memorandum that addresses questions concerning “the role of board of directors, investment conditions, strategy, exit strategies, how the shares could be sold, preferential rights, etc.” Simultaneously, venture capital firm conducts a due diligence; a process whereby investment managers scrutinize and test the viability of the project. Due diligence examines company’s inherent management skills, its forecasting techniques, the assumptions on which financial projections are made, the latest financial reports, intellectual property portfolio position, leasing agreements, employee contracts, etc. This is also a stage in which investment managers start to consider the appropriate incentives for entrepreneurs.

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27 Bagley & Dauchy, 2008, p. 470
28 EVCA, 2007, p. 17
29 Christofidis & Debande, 2001, p. 12
30 Cardullo, unknown, para. 2
31 EVCA, 2007, p. 18
32 Ibid., p. 27
and rights for the fund, as well as to estimate the amount of subsequent financial injections needed in order to cover the costs throughout company’s critical development phase and to estimate the value of the company.\footnote{Chrisofidis & Debande, 2001, p. 13}

After a satisfactory outcome of the due diligence procedure, the venture capital firm issues the term sheet; a document that sets out final terms and conditions to the future portfolio company. The term sheet addresses all issues negotiated during due diligence process, and the conditions set herein are unlikely to be re-negotiated, as all questions should have been resolved before. If the investee accepts the term sheet, lawyers draft the documentation and the deal is done.\footnote{ibid., p. 14}

The investment period of a venture capital fund is usually five to seven years and during this time the investment managers work very closely with the entrepreneurs, providing them with business contacts, managerial guidance, technical knowledge etc. with a single aim: to bring the company high enough to be eligible for initial public offering or trade sale (the “exit strategy”). If it succeeds, the company is sold and profits are realized, if it does not, the company is liquidated and the venture capital fund relies on the “bells and whistles” it negotiated in order to recover as much of the initial investment as possible.
3. INTELLECTUAL PROPERTY

3.1 Meaning and Definition

Implications of the rapid technological development the world has been experiencing in the past decades are wide-ranging: for example, the public has now access to information and education in an unprecedented way, the competition in all layers of economic engagement is fierce as ever before, and it is no longer possible to thrive on the global market without adding additional value to the product or service in terms of innovative technology, design and/or brand. The basic tool of our post-industrial economy is no longer machinery, but information, creative ideas, and innovation. With the availability of copying techniques and piracy, these tools would be valueless without the appropriate protection. Such protection is possible with the concept of intellectual property.\(^\text{35}\)

Intellectual property rights are exclusive rights attached to creators with regard to their intellectual creation, as oppose to the physical property, and are regarded as intangible assets.\(^\text{36}\) Creations of the mind intellectual property refers to are “inventions, literary and artistic works, and symbols, names images, and designs used in commerce.”\(^\text{37}\) The purpose of intellectual property protection is two-folded: first, “to give statutory expression to the moral and economic rights of creators in their creations and the rights of the public in access to those creations”, and second, “to promote /…/ creativity and the dissemination and application of its results and to encourage fair trading /…/.”\(^\text{38}\) The Agreement on Trade-Related Aspects of Intellectual Property Rights (hereinafter, “TRIPS”) in Article 7 sets forth the objective of intellectual property rights protection and enforcement as “the promotion of technological innovation and /…/ the transfer and dissemination of technology, to the mutual advantage of producers and users of technological knowledge and in manner conductive to social economic welfare, and to a balance of rights and obligations.”\(^\text{39}\)

Intellectual property rights are legal tools that give their holders legally protected position and exclude all third persons from commercial exploitation of holders’ intellectual creations. “These rights, however, do not apply to the physical object in which the creation may be embodied but

\(^{35}\) Tritton et al., 2008, p. 3 – 4

\(^{36}\) ibid., p. 7

\(^{37}\) WIPO, What is Intellectual Property?, para. 2

\(^{38}\) WIPO, 2004, p. 3

\(^{39}\) TRIPS, §7(1)
instead to the intellectual creation as such.” Intellectual property assets are also commodities: business assets that can, if managed in a proper manner, generate significant revenue for the holder and increase the value of the company, or, if managed poorly, mean only waste of money and revenue-generating opportunities. The exclusivity provided by the intellectual property rights is, however, limited in time and in territory.

According to Ocean Tomo, LLC, an Intellectual Capital Merchant Banc firm, “intellectual property assets /…/ generate what economists would refer to as “excessive profits” to their owners, causing relatively high levels of returns compared to other assets. Similarly, it appears that today more than ever, on average, intellectual property assets are likely contributing more value to corporations than any of their other assets. In 1975, only 17 percent of the market value of the S&P 500 companies was represented by intangible assets. In contrast, in 2010 intangible assets represented 80 percent of the market value of the S&P 500 and we believe that much of this value represents legally-protected intellectual property assets including patents, trademarks, copyright and trade secrets, among others.”

Intellectual property rights are divided into two categories: industrial property rights, which include patents, trademarks, industrial designs, and geographic indications of source; and copyrights, which include literary and artistic works. The intellectual property rights most relevant for the rapidly growing start-up companies seeking venture capital financing are industrial property rights and, due to the protection of computer software, copyrights. Accordingly, the next chapter describes patents, trademarks, industrial design, topographies, and copyrights as well as protection of know-how in the form of industrial secrets and trade secrets.

3.2 Types of Intellectual Property Rights

3.2.1 Patents

Pursuant to Article 27 of TRIPS, “patents shall be available for any inventions, whether products or processes, in all fields of technology, provided that they are new, involve an inventive step and are capable of industrial application.” As patents are used “to encourage innovation in

40 WIPO, 2004, p. 3
42 Ocean Tomo, LLC, 2010, as paraphrased in Burton & Weingust, unknown, para. 8
43 WIPO, 2004, p. 3
44 TRIPS, §27(1)
scientific and engineering disciplines⁴⁵, they only apply to product or process inventions - "practical solutions to specific problems"⁴⁶ - in the field of technology. Such invention shall not be excluded from patentability if "it does not form state of the art"⁴⁷, if, "having regard to the state of the art, it is not obvious to a person skilled in the art"⁴⁸, and if "it can be made or used in any kind of industry, including agriculture."⁴⁹ Furthermore, TRIPS also requires that "patents be available and patent rights enjoyable without discrimination /…/"⁵⁰

The underlying idea of a patent is that “the patented invention may not be exploited in the country by persons other than the owner of the patent unless the owner agree to such exploitation."⁵¹ The monopoly established thereby represents a reward for inventor’s creativity and, as a natural consequence, stimulates scientific progress.⁵² As TRIPS lays down, patents confer the holders an exclusive right to prevent third parties from, first, making, using, offering for sale, selling, or importing a product; and second, using the process, and using, offering for sale, selling, or importing the product obtained by the protected process, if holder’s consent was not obtained. And most importantly, patent holders also have the right to assign, or transfer by succession, the patent and to conclude licensing contracts.⁵³

However, since technical inventions are oftentimes crucial for the benefit of the society (think of the medicine, for example), the patent applicant is required to “disclose the invention in a manner sufficiently clear and complete for the invention to be carried out by the person skilled in the art /…/.”⁵⁴ This provision follows one of the basic principles in the patent law, namely, that in the exchange of the monopoly, the right holder (applicant) is obliged to reveal to general public how to carry out the invention.⁵⁵ This makes patents one of the prime sources of technical information.

The concept of patenting technological inventions does, however, have negative sides as well. As the costs of obtaining a patent are high, the system favors larger companies and gives little

⁴⁵ Hacon & Pagenberg, 2007, p. 28
⁴⁶ WIPO, 2004, p. 17
⁴⁷ EPC, §54(1)
⁴⁸ ibid., §56
⁴⁹ ibid., §57
⁵⁰ Seville, (2009), p. 77
⁵¹ WIPO, 2004, p. 17
⁵² Tritton et al., 2008, p. 226 as cited in Sa Cnl-Sucal Nv v. Hag Gf Ag, 1990
⁵³ TRIPS, §28
⁵⁴ ibid., §29(1)
⁵⁵ Hacon & Pagenberg, 2007, p. 97
alternative to the start-up companies; assuming that intellectual property rights are a requirement for obtaining venture capital financing, huge costs of patents force start-ups into either obtaining shaky patents or settle with another inadequate protection. Furthermore, patent protection can obstruct (further) development of new technologies and restraints competition (think of the plug-ins, such as universal USB key).

3.2.2 Trademarks

The term “trademark” is often used as an umbrella to cover different types of the so-called “source identifiers”, for example, trademarks, trade names, trade dresses, logos and design marks, and product configurations.\(^{56}\) Trademark’s most distinctive feature is that it offers endless protection to its holder.

A trademark is any sign, or any combination of signs, with the capacity of distinguishing the goods or services of one business from the goods or services of the other (as Klein calls them, a “source identifier”). Such signs are, for example, personal names, letters, numerals, figurative elements and combinations of colors, as well as any combinations of these or other signs used to identify a business.\(^{57}\) A trade dress is a complete image of a product, including its shape, size, color, textures etc., and even its sales technique.\(^{58}\)

Trademarks give their holders an exclusive right over the use of the above-mentioned signs and thus incentivize them to “promote the reputation of the mark and goods or services sold under the mark in the knowledge that others will not be able to exploit the mark’s reputation.”\(^{59}\) The main characteristic of a trademark is that it allows consumers to distinguish between the products or services from different sources when they are offered on the market. It also serves as a guarantee to the consumer, that all products or services bearing a particular mark are likely to be of the similar quality. Uniform quality is, however, in turn likely only, if the products or services can be offered under the exclusive control of an enterprise to which responsibility for the quality may be attributed. Naturally, trademark cannot legally guarantee a level of quality customers expect, but give an economic incentive to enterprises to maintain certain quality level and that is usually sufficient.\(^{60}\)

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\(^{56}\) Klein, 2007, p. 88

\(^{57}\) TRIPS, §15(1)

\(^{58}\) Klein, 2007, p. 88

\(^{59}\) Tritton et al., 2008, p. 225 as cited in Sa Cnl-Sucal Nv v. Hag Gf Ag, 1990

\(^{60}\) Ibid., p. 225 - 227
### 3.2.3 Industrial Design

“Industrial design /…/ refers to the creative activity of achieving a formal or ornamental appearance for mass-produced items that /…/ satisfies both the need for the item to appeal visually to potential consumers, and the need for the item to perform its intended function efficiently.” 61 Industrial design therefore applies to the aesthetic component of external appearance of a product and can be protected with a registration, if it meets the criteria of independent creation, newness and originality. 62 Owning a protected design means having a right to prevent third parties from making, selling or importing products bearing or embodying a design which is a copy of the protected design, under the condition that the above is done in order to benefit financially. 63 The subject matter of industrial design protection is an abstract conception or an idea, not commercial exploitation of protected articles or products; the protection extends only to such articles or products as embodies of the protected design. Manufacturing or selling of articles or products with the same function does not represent an infringement as long as these articles or products do not embody the protected visual appearance.

### 3.2.4 Topographies of Integrated Circuits (Semiconductors)

“Semiconductor products consist of a body of material whose surface includes a layer of semiconducting material and one or more other layers composed of conducting, insulating or semiconducting material. These layers are arranged in accordance with a predetermined three-dimensional pattern. The functions of semiconductor products depend in large part on this three-dimensional structure, which is the “topography” of the semiconductor product.” 64 The underlying purpose of intellectual property protection is to shield the design of semiconductor products (that is, its topography), independently utilizable parts of such topographies and layout needed for their production, so that the copying is prevented. 65, 66 Protection is therefore granted for the design, not the technical function or the technological arrangement of components on the semiconductor. 67

Such topographies are protectable insofar they are a result of its creator’s own intellectual engagement; if they consist of certain common combinations of elements, they can be

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61 WIPO, 2004, p. 112  
62 TRIPS, §26  
63 ibid., §27  
64 Klett, Sonntag & Wilske, 2008, p. 51  
65 Klitzsch & Stockmair, 2001, p. 192  
66 Klett, Sonntag & Wilske, 2008, p. 51  
67 Executive Agency for Competitiveness and Innovation, 2006, para. 1
protected only if these combination are arranged in an original way.\textsuperscript{68} The protection extends to importing, selling, or distributing protected topographies, integrated circuits that include the protected topography or articles that include such integrated circuits.\textsuperscript{69}

3.2.5 Copyright

According to the Berne Convention for the Protection of Literary and Artistic Works as revised by the Paris Act in 1971 (hereinafter, “Berne Convention”), copyrights protect “every production in literary, scientific and artistic domain, whatever may be the or form of its expression, such as books, /…/, lectures, /…/, musical works, /…/, works of drawing, painting, architecture, /…/”\textsuperscript{70} etc. As TRIPS sets forth, copyright protection also extends to expressions, and not only to ideas, procedures, methods of operation or mathematical concepts as such.\textsuperscript{71}

Copyrights are granted automatically upon the creation of a literary, scientific or artistic work with the moment such work is available in some material and reproducible form; no additional formalities are needed.\textsuperscript{72} As copyrights are based on the independent origin of a work, similarities between two works with a different origin do not constitute copyright infringement, meaning, copyright “protects against copying the particular expression of the work, but does not protect the idea embodied in that work.”\textsuperscript{73} Copyrights therefore constitute a so-called “qualified monopoly”, as oppose to an absolute monopoly conferred by patents and trademarks. Copyright protection awards its holder the right to, first, reproduce the work; second, prepare derivative works based on the protected work; third, distribute copies of the work or to publicly perform the work; and fourth, publicly display the copyrighted work, although all the above rights are subject to the “fair use” doctrine.

Copyrights serve as an incentive to create and disseminate knowledge. If the society wishes to encourage intellectual activity and share knowledge in an organized and fair manner, ensure scientific progress etc., and if it wishes to foster the development of computer programs (they are, in fact, oftentimes the key product of today’s start ups), it must accept limitations that the copyright system brings.\textsuperscript{74} Only the possibility of efficient knowledge transfer that at the same time gives due where due needs to be given can ensure the development of new ideas and

\begin{footnotes}
\item[69] TRIPS, §36
\item[70] Berne Copyright Convention, §2
\item[71] TRIPS, §9(2)
\item[72] Tritton, 2008, p. 467 - 468
\item[73] Klein, 2007, p. 107
\item[74] WIPO, 2004, p. 41
\end{footnotes}
their transformation into successful products.

3.2.6 Protection of Know-How

Know-how, that is, the practical knowledge gained from work experience, analyses and testing, of an enterprise can be among its most important assets and it oftentimes exceeds the value of other protected intellectual property assets. However, as it is invisible, it is cumbersome to describe it, control it and protect it. Therefore, the protection of know-how differs essentially from the protection of other registered or unregistered intellectual property rights. While the latter prohibit third parties from using the subject matter of the right, the protection of know-how stems from “criminal provisions that do not prohibit the use of the know-how as such, but only any use of wrongly gained know-how as a consequence of breaching of the confidentiality /…/.”75 When an information is disclosed to the general public, it can no longer be treated as a trade secret and its usage can no longer be prevented.

To put it in a theoretical perspective, a know-how is any information, first, that is not generally known or readily ascertainable by the persons that normally deal with the kind of information in question, i.e. competitors or other market participants; second, for which its owner takes reasonable measures to maintain its secrecy, such as non-disclosure agreements, restricted physical access and computer passwords, notice of confidentiality and the like; and third, has independent economic value because it is a secret, that is, it gives competitive advantage to the person that has it in possession over those who do not.77

Know-how is divided into two groups, industrial secrets and trade secrets. Industrial secrets include, but are not limited to, drawings, models, formulas, methods, techniques, programs etc. On the other hand, trade secrets can be, but are not limited to, any information or compilation of information about supply, sales, consumer data, price calculations, strategies, employees etc.78

75 Klett, Sonntag & Wilske, 2008, p. 46
76 ibid, p. 45 - 46
77 TRIPS, §39
78 Klett, Sonntag & Wilske, 2008, p. 46
3.3 Computer Software Protection

Computer programs are a product of humans’ intellectual activity, and their development requires an investment of considerable human resources together with clever combination of technical and financial resources. Their protection against unauthorized copying and use is of significant importance, and without it, the producers and investors would not be able to recover their investment.

Computer programs are of fundamental importance in today’s technological development; great majority of technology-based companies that have grown with the support of venture capital financing in international conglomerates and have significantly changed our everyday lives are closely related to the computer industry. Without the possibility of intellectual property protection of their inventions in the area of computer programs, these companies would not have been able to prosper and contribute to technological development and overall welfare of the society. Intellectual property addresses the issue of computer programs protection by offering two different regimes: patent protection and trademark protection.

Patent protection of computer programs as such, that is of “computer programs in the form of formulations of mere algorithms without any context to technical process or apparatus for achieving a technical result” is not possible. However, if a computer program is capable of bringing about a technical effect going beyond normal effects of its use it is not excluded from patentability. A technical character of software is required for patentability and such character is given only if the respective software invention is correlated to a specific technical application. “Such /…/ character can be found in the further effects deriving from the execution of the instructions given by the computer program.” German Supreme Court in the 2010 “Dynamische Dokumentengenerierung” (eng.: “dynamic document generation”) case supports this view and states that the mere fact that a program runs on a computer does not make this concept a technical solution, and furthermore, that shall explicitly bring a solution to a specific technical problem with the use of technical means.

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79 Klitzsch & Stockmair, 2001, p. 271
80 Directive 2009/24/EC, para. 2 of introductory provisions
81 WIPO, 2004, p. 435
82 Klitzsch & Stockmair, 2001, p. 217
83 EPO, Guidelines for Examination, Part G, §3.6
84 Klitzsch & Stockmair, 2001, p. 217
85 ibid., p. 218
86 Stoll, 2013, slide 56
In light of the severe limitations it brings, such protection has turned out to be insufficient; as a consequence, intellectual property has also offered a protection under copyright. “Computer programs in object code form share the copyright status of other literary and artistic works stored in computer systems in machine-readable form.”\(^{87}\) Therefore, all normal prerequisites for copyright protection can be applied to computer programs. Though computer programs in large part consist of elements that are not original, the combinations of such elements can classify as creative.\(^{88}\) “Ideas and abstract methods for solving problems (the so-called “algorithms”) are not protected under copyright, which limits the protection to the expression of such ideas and algorithms, but this is actually a desirable consequence of copyright protection: an appropriate protection is offered without creating unreasonable obstacles to the independent creation of such programs.”\(^{89}\)

TRIPS in Article 10 says that “computer programs, whether in source or object code, shall be protected as literary works under the Berne Convention (1971).”\(^{90}\) Furthermore, The Directive 2009/24/EC of the European Parliament and of the Council on the legal protection of computer programs enacts that “Member States shall protect computer programs, by copyright, as literary works within the meaning of the Berne Convention for the Protection of Literary and Artistic Works.”\(^{91}\) However, the protection applies only to the expression of a computer program in any form, and not to any of its underlying ideas and principles.\(^{92}\)

\(^{87}\) WIPO, 2004, p. 436  
\(^{88}\) WIPO, 2004, p. 437  
\(^{89}\) ibid., p. 437  
\(^{90}\) TRIPS, §10(1)  
\(^{91}\) Directive 2009/24/EC, §1(1)  
\(^{92}\) ibid., §1(2)
4. VENTURE CAPITAL MEETS INTELLECTUAL PROPERTY

4.1 Where Do They Meet?93

Every economy’s basic structural unit is an enterprise. An enterprise is a corporation, a business, a firm or a company that consists of people and assets, is driven by initiative and resourcefulness and organized to conduct entrepreneurial activity.94 Entrepreneurial activity is a capacity and willingness to develop, organize and manage an enterprise along with any of its risks in order to make a profit. A profit is produced by combining land, labor, natural resources and capital into a product or a service, which is then exchanged in the market with customers for monetary compensation. The spirit of entrepreneurial activity is characterized by innovation and risk-taking.95

Products and services, with which enterprises compete on the market, need to be – if the enterprise is motivated to continuously increase their market share and profits and outgrow the competition, at least – inventive in technological sense. Inventive products and services can only be developed over time and with significant investments of human potential and money in the so-called “research & development activities” (“R&D”).

Innovative products and services may be a result of long and costly R&D procedures, but can be copied and commercialized by the competition with only a fraction of those costs. Thus, the law needs to provide an opportunity for an adequate protection, and the law does so by offering the concept of intellectual property rights.

The appropriate use of intellectual property rights brings a strong legal protection of inventive products or services. This leads to lesser exposure of protected inventions to intellectual property litigation by the competitors, a greater predictability of events related to the companies holding a strong intellectual property position, and more stability on the markets. Due to the above, intellectual property rights mitigate risks associated with the company holding them. Furthermore, active management of intellectual property portfolio may brings economic benefits to the company and some of it may be returned to R&D activities, which leads to more innovations and further growth. Because reinforcing and broadening of company’s intellectual property position results in an increase of company’s value, entrepreneurs have more

93 Cardullo, unknown
94 Black’s Law Dictionary, 2013
95 BusinessDictionary.com, 2013
incentives to undertake entrepreneurial projects. When investors discover growing markets that are stable and relatively predictable, they move their resources there in order to capture the economic rents that are associated with the thriving environment.

Confident and stimulated investors are more inclined to engage in investment projects that bear greater risk. Among those, venture capital investments are one of the most popular choices.

Venture capital investors search for dynamic start-ups with innovative products and cutting-edge technologies that can sustain competitive advantage on the market and have a high commercial potential. Sustaining competitive advantage of innovative products or services is possible only, if these products or services are protected with intellectual property rights. Furthermore, fresh start-ups hold little assets, have no revenue history and possibly no final product and are therefore hard to evaluate. Intellectual property assets they hold, however, are relatively easy to evaluate and provide one of the few tangible indicators for calculating the potential of a company.\(^96\) The above makes it clear that “without the strength of intellectual property and its protection, little if any investment would be made into new or growing enterprises.”\(^97\)

The appropriate use of intellectual property protection ultimately results in bringing higher rates of return on capital, and it also mitigates risks of an investment opportunity.\(^98\) In the context of equity investments in young and dynamic start-ups, such conditions are a holly grail of every venture capital investor. More venture capital investments are made, more innovative products are launched, and more intellectual property assets are created. With more and better intellectual property, market is more predictable, stable and stimulated, and as a result more venture capital investments are made. And thusly, the circle is closed.

\(^96\) Dev, 2011, para. 1
\(^97\) Cardullo, unknown, para. 5
\(^98\) ibid., para. 8
In 2009, IP Vision, Inc. in cooperation with MIT Sloan School of Management, Massachusetts, USA, conducted an analysis of over 9,000 venture capital backed companies in the United States of America and their intellectual property positions, using a specially developed rating system. The results of the study (summarized in the three paragraphs below) show that although the presence of a strong intellectual property portfolio may not be perfectly correlated to the success, a significantly higher percentage of successful venture capital backed companies hold strong intellectual property portfolios.

“Success in the venture capital industry is an exit: an acquisition of, or an initial public offering by a portfolio company. Analysis shows that across all sectors a significantly higher percentage of venture capital backed winners (companies that have been acquired or have gone public) have patent portfolios as opposed to losers (companies that are out of business).

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[Cardullo, unknown, para. 6]
Winners are many times more likely to hold intellectual property than losers. Although the presence of intellectual property portfolios is not perfectly correlated to success or failure, this indication alone should support executive and investor focus on the role of intellectual property in their decisions and actions.

While having intellectual property increases the probability of success, those who manage intellectual property well have an even higher probability of success. In certain sectors, such as healthcare, data demonstrates the value of higher quality portfolios. In other sectors, such as telecommunications or information technology, the effect is less prominent – although still clearly and demonstrably present.”

Professor Ernst is of the similar opinion: “A strong, high-quality (patent) portfolio leads to higher company performance and thus higher market valuation. The smaller the firm and the more technology based the industry, the stronger this relationship becomes.”

4.2 Adding Value to the Investors

Fischer and Verni suggest that from the day a company is founded, it should adopt an aggressive intellectual property strategy that will result in a strong and well-managed intellectual property portfolio. Company’s intellectual property strategy shall therefore always be aligned with its business strategy. When pursuing an aggressive intellectual property strategy, a company needs to be well informed about market’s current developments and future trends, as well as about the possibilities of emergence of new and with their core business not perfectly related markets. A company should strive to acquire not only the intellectual property rights crucial for the technology developed in-house, but also those related to their technology that may be of interest to some non-competing companies. Only such approach can allow a company to utilize its intellectual property assets so as to increase the revenues, and to block competitors from company’s present and potential future markets. In order to adopt such approach and to exploit its intellectual property in this way, it is of crucial importance that a company actually owns intellectual property assets it wants to manage.

If a company wants to be an owner of intellectual property assets, it needs to have a legal title regarding the respective assets. “Establishing a proprietary position early in a technology’s
history is important because proprietary technology is the entrepreneur’s top priority in selling a business proposal." In order for this to be ensured, the following issues shall be addressed: first, “employment contracts should bind employees to a worldwide assignment, without further compensation, of all right, title and interest to all ideas, inventions and discoveries within the scope of employment”\textsuperscript{104}; second, assertion of rights in the company’s intellectual property portfolio by former employers or universities of the founders needs to be prevented; third, if a government subsidized research that ultimately resulted in an entrepreneurial project, government’s entitlement to retain rights to, for example, practice the claimed invention should be resolved; fourth, if the invention is a result of a joint discovery between the company and a collaborator, any intellectual property rights resulting thereof shall be properly arranged; and finally, there should be no co-inventors or assignees of the invention who are not simultaneously involved in the company.\textsuperscript{105}

The underlying idea of a strong intellectual property portfolio is that it may bring increased returns to (venture capital) investors. As mentioned, it can do so indirectly; by stabilizing the markets and making them more predictable, by ensuring a continuous competitive advantage of company’s key product or service, and by giving investors a better idea of the actual value of a company. In addition to the above, strong intellectual property position can also affect inventors’ returns directly through monetization of company’s existing intellectual property assets. “Like other types of property, intellectual property assets can be bought, sold, traded, appraised, and used as collateral for a loan.”\textsuperscript{106} This is possible, because intellectual property assets are highly leverageable and exploitable.\textsuperscript{107}

“Monetization of intellectual property assets simply relates to the various strategies and methods an intellectual property assets owner may use to realize and maximize various aspects of the spectrum of value.”\textsuperscript{108} Spectrum of value is a mixture of internal and external monetization opportunities associated with a particular asset.\textsuperscript{109}

In order to successfully generate financial returns from company’s intellectual property assets, these first need to be identified and inventoried. Some are easy to identify, while others are

\begin{thebibliography}{9}
\bibitem{Henos} Henos, 1993, para. 16
\bibitem{Fischer} Fischer & Verni, 2004, para. 12
\bibitem{ibid} ibid., para. 12 - 17
\bibitem{Rizvi} Rizvi, unknown, para. 3
\bibitem{Burton} Burton & Weingust, unknown, para. 6
\bibitem{ibid1} ibid., para. 6
\bibitem{ibid2} ibid., para 6
\end{thebibliography}
more problematic; this mainly applies to the assets created in-house, because they are “expensed as they are created and, therefore, are not found on a company’s balance sheet.”

Once identified, intellectual property assets are grouped together based on their common features. Furthermore, the organized intellectual property assets are ready to be assessed as to “which groups are relatively more valuable then others and likely merit the use of the company’s finite resources for purposes of monetization.” On the basis of the above, monetization strategies can be prepared.

Opportunities for monetization of intellectual property assets are numerous and highly contingent upon a particular situation. The most common are, first, use of assets with regard to company’s products or processes; second, sale of assets (assignment); third, licensing out or cross-licensing of assets for various applications and across industries and regions; fourth, know-how contracts; fifth, use of assets as a collateral in cases of debt financing; sixth, enforcement against potential infringers; and seventh, use for fencing-out the competition.

While the first five options generate additional financial income for the company, the latter two, especially in the case of infringement, can be seen either as prevention of loss of revenue, or additional revenue from “forcing” infringers to enter into a licensing agreement.

4.2.1 Sale of Assets

Sale of an intellectual property right means the transfer of the exclusive right from the owner (the so-called “transferor”) to another person or legal entity (the so-called “transferee”) in exchange for monetary or other compensation. “When all the exclusive rights to a patented invention are transferred, without any restriction in time or other condition, by the owner of the patented invention to another person or legal entity, it is said that an “assignment” of such rights has taken place.”

Aside from the patents, the concept of sale of intellectual property assets (assignment) is applicable also for utility models, industrial designs, and topographies as well as for trademarks.

The transfer of the intellectual property right establishes a legal relationship between the transferor and transferee; as the relationship is contractual in nature, it requires consent from both sides. “When an assignment takes place, the “assignor” no longer has any rights in the

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110 Burton & Weingust, unknown, para. 6
111 ibid., para. 7
112 ibid., para. 6
113 WIPO, 2004, p. 172
114 ibid., p. 172 -173
patented invention. The “assignee” becomes the new owner of the patented invention and is entitled to exercise all the exclusive rights in the patented invention.115

Sale of intellectual property assets does in the context of venture capital backed companies not seem a particularly common situation. It would be appropriate, however, if the company held an asset it does not need and it has to bear costs of asset’s maintenance. The sale would recover (some of) the initial investment and stop burdening company’s cash flow.

4.2.2 Licensing Out and Cross-Licensing

Granting a license means granting an exclusive or non-exclusive permission by the owner of intellectual property right (the so-called “licensor”) to another person or legal entity (the so-called “licensee”) to perform one or more acts that fall within the scope of the right and are bound at least by the territory and time by which the right itself is limited to. In order to obtain a license, licensee is normally obliged to pay monetary compensation to the licensor in the form of lump-sum payment or royalties; in addition, fees as a compensation for services and assistance usually apply as well. The concept of licensing is, similarly to the sale of assets, applicable to all industrial property rights.116

Licenses are always subjects of certain conditions; for example, license may be limited in the scope, territory or time of the right’s use. In turn, licensor usually promises to take action when needed due to, for example, third person’s lawsuit against the licensee on the basis of alleged patent infringement.117

Cross licensing is in essence the same as licensing, but there is a difference in remuneration. With cross licensing, two companies that both hold an intellectual property asset (mainly patent) relevant for the other company grant each other the right to practice the other’s asset. As with normal licenses, cross licenses may be subjects to limitations and conditions. Using cross licensing, companies can avoid court litigation and royalty payments; they are thus “free to compete, both in designing its products without fear of infringement and in pricing its products without a burden of a per unit royalty due to the other.”118

115 WIPO, 2004, p. 173
116 ibid., p. 173 - 174
117 ibid., p. 173 - 174
118 Jaffe, Lerner & Stern, 2000, p. 127
Sometimes technology know-how needs to be transferred (licensed) as well. Such know-how can be related to patents, trademarks or industrial design, and if the owner of a right is also in possession of the know-how, then provisions on know-how transfer are included in the licensing contract. If not, they undertake a form of a separate document called the “know-how contract”. The transfer of know-how happens when the holder of know-how communicates the know-how to the recipient of know-how in either tangible form (documents, blueprints, plans, etc. - “technical information”) or intangible form (the recipient witnesses a production process - “technical services”, or takes part in a training - “technical assistance”, and similar).\textsuperscript{119}

In the case of portfolio companies of venture capital firms, each company usually holds only a small number of intellectual property assets; however, across the whole portfolio, the number of these assets might not be insignificant.\textsuperscript{120} Considering the mentioned, licensing can be of great importance for delivering more value to venture capital investors. First, if a company’s product is successful, it may not develop its production facilities fast enough and may face significant opportunity losses. Licensing can therefore be one of the alternatives to meet the increased demand. Second, if a company is the so-called “walking dead”, meaning it does not grow quickly, but it produces a reasonable and stable cash flow, it does not mean its intellectual property portfolio is “defective” as well; in fact, venture capital funds usually support licensing company’s less important assets in order to increase their return on investment.\textsuperscript{121}

\textbf{4.2.3 Enforcement}

It does not make much sense to have a comprehensive system for intellectual property protection and dissemination of intellectual property rights, if the owners have no possibility for enforcing their protection in an effective manner. “They must be able to take action against infringers in order to prevent further infringement and recover the losses incurred from any actual infringement.”\textsuperscript{122}

It is generally recognized that a good enforcement starts with a strong intellectual property protection, e.g. with well drafted patent claims. Whenever one’s intellectual property right is infringed, one may seek the prevention of infringement and monetary compensation for the damages and loss incurred in front of the competent authority. Alternatively, one may also enter

\textsuperscript{119}WIPO, 2004, p. 174 - 175
\textsuperscript{120}Carson, 2008, para. 11
\textsuperscript{121}ibid., para. 12
\textsuperscript{122}WIPO, 2004, p. 207
negotiation with the infringing party with the aim to reach a licensing or any other agreement, that would recover the owner’s losses and ensure him monetary inflow in the future.

4.2.4 Fencing-Out the Competition

In the world of knowledge, information and other intangible assets, intellectual property rights can be used as “virtual fences” to show the competitors and other market participants where the lines of our property have been drawn and where their conduct might result in a legal action towards them. “Our budget constraints, our attitudes toward intangibles, our degree of expertise and experience in harvesting intellectual assets, and the size and scope of our inventory of properties are all relevant variables in dictating which types of fences should be deployed for which of our properties.”123

Fencing-out the competition is usually done with patents. Obtaining a strong patent with broader claims is not always possible, and therefore application for several patents regarding one invention might be necessary.124 These several patents must be drafted in a way, that interlinks and overlaps among them create a wall around the invention and thereby prevent competitors to duplicate the invention.125 Such defensive tactics is called patent thicketing or patent bracketing.

Such approach to achieving better financial results has a very limited use for the start-up companies. First, because obtaining a larger number of patents is extremely expensive, and if these patent are to be strong(er), the investment is that much larger. And second, patent thicketing cannot guarantee start-ups freedom-to-operate, because the competitors can patent a surrounding technology and thus render market application of the original technology almost useless.126

4.3 Sustaining Competitive Advantage

If a company holds an intellectual property asset, it means it has done something that might have considerable commercial potential. For example, if a company owns a patent, it suggests that the company has developed a product or a process in the field of technology to the extent that it can be positioned on the market. Moreover, it means that this company “has matured

123 Sherman, 2011, para. 3
124 Shane, 2008, p. 48
125 Wilson, 2007, p. 9
126 ibid., p. 9
sufficiently to consider the commercial utilization of the technology /…/, and that it is willing to invest in the protection of its technology by means of intellectual property rights." To put it more simply, this company has recognized that it has developed an advantage over the (potential) competition and is working towards sustaining the said advantage. As mentioned, sustaining competitive advantage is one of the crucial elements of eligibility for obtaining venture capital financing, and it can be done in two complementary ways: first, by choosing the right intellectual property protection, and second, by analyzing patent competitors’ intellectual property landscape.

4.3.1 Which Intellectual Property Right to Choose?

Young start-ups that come under the radar of venture capital investors mainly work in the field of technology and their products are oftentimes a groundbreaking technological innovation in the field of computer science, medicine, green technologies etc. Their inventions should be considered and checked whether they qualify for a patent protection. Alternatively, companies can choose know-how protection. So, which one is better from the perspective of venture capital investors and why?

Although a lot of inventions and the related know-how are not patentable, some of them may fulfill the criteria for patentability. In case of overlapping, the company will face a choice whether to patent the invention or to keep it under the security of industrial or trade secret. Protecting a secret is not limited in time or territory, bears very little costs and has immediate effect. But if the know-how is protected only by the way of keeping it secret, others may be able to buy this product, inspect, disassemble and analyze it, thus discover the secret (the so-called “reverse engineering”) and thereafter be entitled to use it without any restrictions. Clearly, the possibility of such event would substantially reduce company’s competitive advantage and make venture capitalists think twice about an investment. And, the know-how protected as an industrial or trade secret can be patented by somebody else who found the same information by legitimate means; this would prevent the first company to use it. In addition, enforcing a know-how protection can be rather complicated.128

Patents, on the other hand, provide legal protection against the use of an invention by third parties when the know-how is disclosed. It is, however, important to note that obtaining a patent can be extremely expensive. If it comes to patent litigation because the patent seems

127 Dev, 2011, para. 4
128 WIPO, Patents or Trade Secrets?, para. 1
weak (which, in fact, happens often when we are talking about commercially successful projects), huge costs become a real threat. Venture capital backed enterprises cannot afford such litigation; they need to devote their money, time and other resources for technological development and commercialization. The threat of expensive lawsuit, therefore, may be a sufficient element to reduce the probability of venture capital financing\textsuperscript{129}; with industrial and trade secrets, expensive litigation procedures are not an issue, which, in my opinion, makes industrial or trade secret better means of protection that (weak) patents that are opened to litigation.

Considering the above, it is safe to say that a venture capital backed company should choose know-how protection over patents when a strong patent protection is not attainable. In addition, such company should opt for industrial or trade secret when “the likelihood is high that the information can be kept secret for a considerable period of time,”\textsuperscript{130} or “when the secret relates to a manufacturing process rather than to a product, as products would more likely be reverse engineered,”\textsuperscript{131} or “when you have applied for a patent and are waiting for the patent to be granted.”\textsuperscript{132}

Fischer and Verni claim, that venture capital investors mainly focus on companies’ patents and secrets, and not very little on their trademarks and copyrights, “because they generally contribute less to company’s revenue /.../.”\textsuperscript{133} In my opinion, venture capital investors should deem trademarks and copyrights just as important. Trademarks are crucial for differentiation of company’s flagship product from competitive products and for their positioning in the market. For example, social media companies such as Facebook, Twitter and LinkedIn were in the beginning not dependent on patent protection as their product is not an invention in that sense; they did, however, need to distinguish themselves in the market by building and protecting a strong brand. Similar level of importance should be, in my opinion, attached to copyrights as well. Without the adequate protection of computer software against piracy, many companies from Microsoft and Adobe to thousands of smaller ones that facilitate faster and more efficient operations of businesses around the globe would not exist.

\textsuperscript{129} Cardullo, unknown, para. 3
\textsuperscript{130} WIPO, Patents or Trade Secrets?, para. 3
\textsuperscript{131} ibid., para. 5
\textsuperscript{132} ibid., para. 6
\textsuperscript{133} Fischer & Verni, 2004, para. 6
4.3.2 Analyzing Competitors’ Intellectual Property Landscape

Sustaining competitive advantage requires constant changing and adapting of the business and investment decisions to the market situation and competitors’ behavior. In the context of venture capital investments in technology-based companies, an important way of doing this is by collecting and analyzing relevant business information available in the published patent applications. “When one knows how to extract and analyze the right data in patents, significant business insights are effectively hiding in plain sight.”\textsuperscript{134}

Patent filing information, for example, can provide insights that help to maintain competitive advantage and raise the value of the company by revealing where “the entrepreneur should focus his patenting efforts beyond the parameters of his specific inventive concept. By undertaking a competitive review of what others have sought to protect in their relevant product, the entrepreneur can better understand the full breadth of the rights he has.”\textsuperscript{135} With such information, the company can re-adjust the claims in its patents or file for additional patents and thus improve its position vis-à-vis its direct competitors or prevent competitive knock-offs of the product by the competitors.\textsuperscript{136} If a start-up knows the intellectual property landscape of its competitors, it can increase its protected plot in the unprotected areas and increase the value of the intellectual property portfolio.

4.4 Impacting the Valuation

It is a well-known fact that evaluation of young technology-based ventures can be highly arbitrary and problematic, because such companies do not have any track record yet, are still months away from their first revenues and hold mostly intangible assets such as know-how. Inability of exact evaluation puts investors in an ambiguous position; hence, intellectual property assets – largely patents, but others as well – are the only indicators investors can rely on for calculating company’s potential. The reasons for that are the following: “patent is a readily observable attribute of the patentee, which is costly for the patentee to obtain.”\textsuperscript{137} In addition, holding a patent shows that the company has developed an invention in the field of technology or innovated a certain technological process, and that it is conquering “defined and carved out

\textsuperscript{134} Hutter, 2009, para. 5
\textsuperscript{135} Hutter, 2009, para. 5
\textsuperscript{136} ibid., para. 7
\textsuperscript{137} Dev, 2011, para. 3
market niche.” All this makes patents and other intellectual property assets one of the few tangible indicators for calculating the potential of a company.

4.4.1 Intellectual Property Due Diligence

When considering an investment in a start-up, venture capitalists have to, among others, conduct an investigative process of company’s intellectual property assets; such process is called “due diligence”, and its goal is to identify, carefully analyze and then weight the economic value of company’s intellectual property assets and liabilities. The due diligence process may highlight unrecognized bargains for venture capital investors and more effective monetization strategies that can improve their investment decisions and increase potential returns, or – on the other hand – reveal challenges related to the company’s intellectual property portfolio that may seriously endanger the viability of the entrepreneurial project, such as infringement of third party’s intellectual property. In order to conduct the due diligence, “venture capitalists may hire external intellectual property experts, such as patent attorneys, to evaluate the legal and technical foundations of a given patent application in terms of the claims of patent specification /…” Intellectual property due diligence focuses on five main elements: first, ownership issues; second, chain of title issues; third, product marking; fourth, maintenance fees; and fifth, litigations issues.

I have already written about the ownership issues under the chapter 4.2 Adding Value to the Investors; at this point, I would only like to emphasize that it is of the utmost importance that the company establishes “unequivocal rights to its intellectual property assets.” This means, for example, that if the entrepreneur is also the owner of an industrial property right, venture capital funds will expect the right to be assigned to the company, and not merely licensed. Furthermore, the company and the venture capitalist should ensure that its intellectual property rights have a clear chain of title; meaning, it should be known who was the asset owner in any point in time. In addition, in some jurisdictions it is necessary to label protected good with the intellectual property right number, e.g., patent number, in order to be entitled to damages in the event of infringement. Also, the amount of maintenance fees should be identified, and they should be paid in time. And finally, existence of any actual or threatened litigation against one or

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138 Dev, 2011, para. 3
139 Klein, 2007, p. 144
140 Burton & Weingust, unknown, para. 14
141 Dev, 2011, para. 5
142 Fischer & Verni, 2004, para. 10
143 ibid., para. 11
more of company’s intellectual property assets can seriously affect venture capital transaction due to the costs that may arise; these issues should therefore be adequately inspected.\textsuperscript{144}

After the due diligence is conducted, the investigators usually issue due diligence opinions; their purpose is to inform the venture capitalist about the status of company’s intellectual property portfolio. The most important ones are freedom-to-operate opinion, invalidity opinion and non-infringement opinion.\textsuperscript{145}

Freedom-to-operate opinion involves a “product clearance” investigation and is “particularly important when a company is looking to introduce a new technology or product into the market.”\textsuperscript{146} The aim of freedom-to-operate analysis is to identify competitors’ patents that may limit or block market commercialization of company’s product or prevent establishing a dominant patent position.\textsuperscript{147} If freedom-to-operate opinion is not positive, company’s product or service will infringe third party’s intellectual property position; in such case, venture capital investments in a start-up company with a single key product would make little sense. Freedom to operate seems even more important in light of the fact, that once a start-up picks ups, its intellectual property position will get thoroughly scrutinized by the competitors and every, even remotely potential infringement will be aggressively attacked. It is therefore crucial that these issues are addressed in advance and resolved by either acquiring licenses or designing the product or service around third party’s patents.

Invalidity opinion “serves to neutralize patent claims that cannot be avoided, if it can be determined that such patent claims are invalid,”\textsuperscript{148} while non-infringement opinion “serves to avoid known problems, for example, to validate that a product has been properly design around problematic patent claims of others.”\textsuperscript{149} Both “consider the validity and enforceability of a patent in view of prior art and certain public events, such as prior disclosures, public access, and non-sale activity, each being assessed in accordance with the laws of the country from which the patent issued.”\textsuperscript{150}

\begin{footnotes}
\item[144] Fischer & Verni, 2004, para. 21
\item[145] ibid., para. 9
\item[146] Mitchell, 2006, para. 8
\item[147] Fischer & Verni, 2004, para. 21
\item[148] Arora, 2005, p. 1
\item[149] ibid., p. 1
\item[150] Fischer & Verni, 2004, para. 21
\end{footnotes}
4.4.2 Intellectual Property Valuation

In the context of venture capital transactions, the primary reason for valuation of company’s intellectual property assets is not only to get a sense of company’s intellectual property position, but also to get a better understanding of company’s market potential and value. As mentioned, intellectual property can be one of the few tangible indicators of a start-up’s actual value.

Valuation of intellectual property assets is not as straightforward as valuation of tangible assets, because, first, no public trading markets exist for intellectual property assets; second, terms and conditions applicable to a particular intellectual property asset vary from case to case; third, “intellectual property assets are inherently dissimilar, and the dissimilarity is sometimes required by law”\(^{151}\); and finally, the details of intellectual property transactions are usually not made public.\(^{152}\)

There is a plethora of valuation methods available, and depending on what kind of value is required, a specific approach or combination of approaches may be chosen. It is important to note, that value does not mean asset’s price, but its worth to the buyer and seller.\(^{153}\) Obviously, each of the available methods has its weaknesses and strengths, and oftentimes only the combination of approaches yields the best results. Generally, methods are divided into quantitative and qualitative methods.\(^{154}\)

Venture capitalists for the purpose of their transaction require two basic information: first, what is the monetary value of company’s intellectual property assets and what are their financial implications, and second, what are the risks and opportunities associated with the assets. In order to get an answer to both questions, they need to combine two approaches: the option pricing method, and the qualitative evaluation method.

In my opinion, the appropriate method to obtain the first information is the so-called “option pricing” method, because it is particularly useful “when there is a high degree of uncertainty, some managerial flexibility and not all the information is known at a particular time.”\(^{155}\) Among others, this method is increasingly used in early stage intellectual property developments and

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\(^{151}\) Hagelin, 2002, p. 357  
\(^{152}\) ibid., p. 356 - 357  
\(^{153}\) Hagelin, 2002, p. 358  
\(^{154}\) ip4innov, 2008, p. 4  
\(^{155}\) ibid., p. 9
commercialization, which corresponds to the situation of technology-based start-up companies.

The way option pricing method works is that it treats the development and commercialization of company’s intellectual property assets as a series of options. “Option valuation of intellectual property views an investment in intellectual property as an option to develop the intellectual property or to abandon the intellectual property, depending upon future technical and market information.”\(^{156}\) Meaning, when the intellectual property is developed, many decisions as to the investment timing, scope of protection, monetization etc. need to be made. All information regarding the above becomes available at a later stage. The option pricing method, therefore, “takes into account the flexibility of the future decisions.”\(^{157}\) As such, the method is useful as it incorporates the value associated with the uncertainty and takes into account the flexibility in the development of company’s intellectual property position.\(^{158}\) Moreover, this method recognizes that the risk decreases over time, as additional technical and market information is obtained.\(^{159}\)

To answer the second question, however, qualitative evaluation method should be undertaken. The purpose of the qualitative evaluation method is to serve with comparing, categorizing and ranking of company’s intellectual property assets vis-à-vis the competitors, and to discover associated risks and (monetization) opportunities. Qualitative evaluation method provides a guide for analyzing and scoring of different factors (the so-called “value indicators”) that act as a proxy for the value of intellectual property assets and can affect them in a negative, as well as in a positive way. The information needed to evaluate the value indicators is usually easily obtainable, and once all the information is collected, the procedure is fairly straightforward.\(^{160}\)

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\(^{156}\) Hagelin, 2002, p. 394

\(^{157}\) ip4inno, 2008, p. 9

\(^{158}\) ibid., p. 9

\(^{159}\) Hagelin, 2002, p. 395

\(^{160}\) ip4inno, 2008, p. 10
5. CONCLUSION

I am strongly of the opinion that the future of our economy lies in entrepreneurial ventures with the craziest and the most disruptive ideas that strive to be and work better and better, that is, create (more) thick and meaningful value, earn (more) profits and thus conquer more of the terra incognita of economic prosperity. Umair Haque, a British-Pakistani thinker, named this approach “betterness”\(^{161}\) - the business of the 21\(^{st}\) Century. As I discussed in the introduction, such ventures cannot thrive outside a fertile environment; and creation of such starts with society’s positive perception of entrepreneurial endeavors and ends with supportive regulatory framework. Under the latter, I have identified two important elements: possibility of financing system that focuses on high-risk investments, and possibility of protection of one’s intellectual creations that represent the basis for inventive products and services.

It is no secret that the fundamental challenge start-ups with high growth potential face is how to obtain an adequate amount of financial assets together with managerial, recruiting and technical support. When the growth is as fast as it needs to be, things are hard to keep under control; as Mario Andretti, a son of Italian ancestors from Motovun in today’s Croatian Istria and one of the most successful racing drivers of all times put it nicely: “If you have everything under control, you are not moving fast enough.” With a swiftly growth, however, risks tag along, but also do the opportunities for significant financial returns. And this is where venture capital investors like to step in.

Venture capital investors seek start-ups with inventive products that can achieve fast market growth, sustain competitive advantage as long as possible and have a huge monetization potential. As I established in this thesis, such products need legal protection in the form of intellectual property rights, otherwise they would get copied at a fraction of their development and marketing costs and sold for much cheaper than the original product. This would, obviously, destroy inventive product’s monopoly, prevent financiers and entrepreneurs to recoup their investments and consequently severely decrease the number of innovations and slow down the economic growth. Intellectual property system therefore fosters technological development, knowledge sharing and allocation of capital to where it can best be utilized; this positions it as one of the central elements in every country’s legal and economic infrastructure.

\(^{161}\) Haque, 2012, p. 7
On the basis of my research and the information presented in this thesis, I claim that intellectual property assets can in fact positively impact start-up’s negotiation position vis-à-vis venture capitalists, secure better investment conditions and better company valuation, and improve company’s chances of commercial success. Their impact derives from the following: first, strong intellectual property position helps to sustain competitive advantage of a product or service. Second, strong position also mitigates risks, because it reduces exposure to litigation, increases predictability and market stability. Third, active intellectual portfolio management increases revenues and value of a company. Fourth, intellectual property position can be one of the few indicators that show actual market value of a company, that lacks constant cash flow, have little assets and possibly no final product. And finally, intellectual property leads to more intellectual property, more innovation, more revenues and higher return on investment for venture capitalists. It is important to note, however, that intellectual property has a value for the enterprise only if it is aligned with its business activities and interests.

In order to help entrepreneurs and venture capitalist investors utilize intellectual property assets for either improving their negotiation position or increasing their return on investment, I would like to present four suggestions that have matured during the preparation of this thesis.

First, entrepreneurs that are planning to grow their start-up quickly and with the assistance of venture capital should apply intellectual property as early in the process as possible. On one hand, this may prevent (potential) competitors not only from duplication the invention, but more importantly, from undertaking such intellectual property protection tactics that would render market application of innovator’s creation useless. On the other hand, early adoption of intellectual property protection shows venture capitalists that the company’s technology has the potential big enough to persuade the company to invest in the protection, and that the company is moving forward with its plans quickly and effectively.

Second, companies should not only hold intellectual property assets, but should also utilize them strategically, so as to increase the revenues. This is easier said than done; start-ups usually do not have the required knowledge in-house, nor they have sufficient resources to afford external intellectual property management consultants. I would therefore suggest a more active role of venture capital funds in promoting strategic intellectual property management; as they have enough resources and could use consultancy services across their whole portfolio; this would in my opinion make most sense.
Third, with the time constraints and bundle of things that need to be taken care of for the venture capital transaction to go through successfully, intellectual property due diligence sometimes falls out from the priority list. As a result, lucrative opportunities may pass unrecognized, or, on the other hand, investments in problematic projects may be made. My suggestion is that venture capital investors devote more time to thorough scrutiny of company’s intellectual property position; within that, special emphasis should be given to the freedom-to-operate analysis.

Finally, I suggest that start-up accelerators, associations of entrepreneurs, co-working organizations and other protagonists of the start-up scene start promoting the importance of intellectual property through holding intellectual property trainings, education conferences and the like for the entrepreneurs, and offering access to intellectual property consulting services and patent attorneys. This would, in my opinion, raise the awareness of the importance of intellectual property protection for young companies and venture capital investors.

To conclude, I would like to quote Joff Wild, who brilliantly recognized that “a healthy intellectual property position may not guarantee a start-up technology company is going to be successful, but it is going to find it a whole lot harder to succeed if it does not have one. And crucially, it is not just the ownership of intellectual property that is important, it is the understanding that intellectual property is a key.”162 And understanding of intellectual property’s importance in the realm of venture capital transactions, in my opinion, is one of the shortcuts to more of what Umair Haque calls “betterness”.

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162 Wild, 2010, para. 3
6. BIBLIOGRAPHY

6.1 Literature


6.2 Websites


