

VENTURE CAPITAL INVESTMENT CRITERIA IN GAME SOFTWARE COMPANIES

Initial investments in the Finnish game industry

Master's Thesis
in Accounting and Finance

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1 INTRODUCTION

1.1 Motivation

This thesis is about the interaction of two interesting modern industries: the venture capital (VC) industry and the digital game industry. VC is a relatively small, specialised but increasingly vital part of a modern, well-functioning financial system - and thus the whole economy. Venture capital is part of private-equity finance and refers to high-risk finance for relatively new companies, usually technology-driven and a promise of very high return on investment (see e.g. Landström 2007, 3; Gompers & Lerner 2004). Venture capitalists (VCs) provides crucial funds for new ventures and thus facilitates creative forces in the economy. For example, Finnish VCs invested 121 million € into 195 growth-companies in 2016 and raised 114 million € of funding for future investments (FVCA 2017, 3). Many successful companies around the globe from Microsoft to Facebook and Supercell have relied on venture capital for growth. (Lehtonen 2011; Fortune.com 2011; VentureBeat.com 2015) VCs mitigate information asymmetry and agency problems in the economy and thus increase the overall performance of the economy (see e.g. Gompers & Lerner 2004; Amit et al. 1998).

This thesis explores the investment criteria of venture capitalists in a specific industry, the game software industry. The relevant related topics are venture capital and of course the game software industry itself. Countless game companies have been financed by VCs and the game industry is seen interesting among VCs. The dynamics in a relatively new, booming and fast-changing industry provide an interesting framework for VC research. VC investment criteria are interesting since they form the basis of the whole VC-venture relationship. Investment criteria are naturally especially interesting for new ventures trying to acquire VC funding.

Since its emergence in the mid-20th century, games have become a very significant cultural, technological and economic phenomenon (see e.g. ESA 2017; Fromme & Unger 2012). Like companies in any industry, game companies require finance for growth. Despite over fifty years of growth, the game industry has still a growing importance in many aspects of the society, including the economy. In Finland, the games industry has grown in turnover from 40 million euros in 2004 to 105 million in 2010 and to a staggering €2,5 billion euros in 2016 (only game development) (Neogames 2017; Neogames 2011). The boom is due to cultural changes – playing is more mainstream than it used to be – as well as technological change: the emergence of smart phones has a powerful enough device into everyone’s pocket and high-speed wireless data transfer has made the distribution of games easy. As any booming sector, the game industry has made many investors wealthy. For example, the Finnish mobile game company Supercell was valued at \$770 million

less than three years after founding, and €10,2 billion after six (Forbes.com 18.4.2013, Forbes.com 22.6.2016). Finland can be described as a “game industry superpower”, with a larger market share on the global market than suggested by our GDP: mobile games generated around 35 billion euros in turnover globally, of which Finnish mobile game developers generated about 7 %. The incremental value to the Finnish GDP was roughly 0,5 % in 2016, a significant share for a single industry. (Neogames 2017) For example, the share of the whole mining industry to Finnish GDP in 2016 was 0,4 % (Tilastokeskus 2017). Thus, the game industry has special national significance.

In addition to steady and high growth, during the last decade much of the game industry has gone through a major shift in business logic (see e.g. Neogames 2017; Lappalainen 2015; Kuorikoski 2014; Marchand & Hennig-Thurau 2013) The Internet and mobile technologies such as Apple’s AppStore, Steam and GooglePlay have revolutionarised the distribution of games. The barriers of entry to the industry have decreased considerably leading to an increase in game supply – and more game companies. Earlier, when the game industry was dominated by a few major actors, an investor could just invest in the few publicly listed stocks of for example Nintendo or Electronic Arts to diversify into the industry. Today, there is vast amount of aspiring game companies, many of which turn out to be extremely profitable – most of course not. This sort of an environment offers opportunities for VCs. The game industry dynamics are explained in further detail later in this thesis.

Nowadays an investor can invest in a far greater amount of smaller companies and even individual products, either directly or through private equity investment funds, VCs or other kind of funds. This thesis explores venture investing in the game industry. Venture capital funds exist to generate profits for their limited partners (LP), which provide the investable funds for the VC. Venture capitalists operate with a fairly uniform process, called a *venture capital cycle*, where the VC reviews a large amount of possible investments in so called deal origination, screens the more promising ones, evaluates the most promising ones in detail, negotiates an investment with the company (or entrepreneur, used interchangeably in this thesis), manage and support the investment and then eventually exit the investment, reaping profits or accepting losses. It must be emphasised that most VC investments fail and a very few return spectacular profits, so any VC will have a portfolio of investments. (see e.g. Tyebjee & Bruno 1984, Sahlman 1990, Fried & Hisrich 1994) Although the returns are difficult to measure objectively, VC activities in the US seem to yield well, with average 10 years period (1994-2004) annual returns of 25,4 %. The newer European VC industry seems to perform poorly, with returns of only 5,3 % (1995-2005), although the return rates vary depending on the period. (Leleux 2007, 245-250)

Since the mid-1970’s, there has been fairly much research on venture capital investment criteria. The main findings are not very surprising, and there is a fairly uniform

consensus about the *general* criteria of VC investment decisions. VCs stress the importance of the ventures management, markets, product/service and financials. However, there is considerable variety in the details suggested, as well as different situational or environmental issues. Research is thus far from conclusive and offers various interesting open questions, as discussed later on in this thesis. (Šimić 2015, Martel 2006, Kaplan & Stromberg 2004, Boocock & Woods 1997, Muzyka et al. 1996, Fried & Hisrich 1994, Rah et al. 1994, Hall & Hofer 1993, Roure & Keeley 1990, Hisrich & Jankowicz 1990, Robinson 1987, MacMillan et al. 1987, MacMillan et al. 1985, Tyebjee & Bruno 1984). For example, the researcher found no research specifically on game industry or other creative industry investments. Also, the Finnish VC companies are not extensively studied, since most of the research is from the US – although there are interesting international studies, which show some differences in VC behavior by country (see e.g. Narayansamy et al. 2012, Berglund 2011, Visagie 2011, Kollman and Kuckertz 2010, Vinig and Haan 2002, Zutshi et al. 1999). Research on a specific industry and geographical area complements previous research. In addition, despite the game industry is clearly promising for the investor, as a new industry it has limited research from the point of view of finance, especially in Finland. This thesis aims at providing new insights both to VC and game industries. In their study about the opinions of real Silicon Valley VCs about VC research, Cannice et al (2016) find that these VCs found additional research on investment decisions relevant, supporting the topic of for example this thesis.

Venture capital activity has increased tremendously in the past decades: in the US alone from \$1 billion in 1976 to over \$250 billion in 2001. This exceeds the growth of almost every class of financial products. (Gompers and Lerner 2004, 515-517). In Finland, the total sum of VC investments by Finnish private equity firms grew from just €27 million in 1996 to €121 million in 2016 (FVCA 2017). Gompers and Lerner identify technological innovation, presence of competitive and liquid markets and willingness of highly skilled managers and experts to participate in entrepreneurial activities as core reasons for the growth of venture capital and predicts that the trend will continue (Gompers and Lerner 2004, 515-517). Research in the field is thus relevant from the point of view of the whole discipline of finance. The findings can possibly offer interesting insights to other sectors of the economy as well, since the uncertainty, fast-paced and knowledge-intensive nature and volatility present in the game industry resembles other creative and technology industries.

From a practical point of view, operators – investors, publishers and developers – in the game industry benefit from systematic analysis of VC investment criteria. The fracturing of the industry has created much more investment opportunities. It takes considerable expertise to identify lucrative companies. A better understanding of VC dynamics would increase the efficiency of capital allocation in the industry, benefiting both the firms in the form of lower capital costs and investors in the form of more predictable

investments. Therefore, tools based on scientific research have relevant practical use. For a game company, it is useful to understand the criteria used by VCs to raise capital more efficiently. For the VC, it is useful to understand the criteria of other VCs to refine own processes and analytical frameworks. In short, both game companies and venture capitalists can benefit from this thesis.

In conclusion, research in the field can be seen as scientifically relevant and somewhat novel, and practically useful. In addition to being a thesis about venture capital finance, the thesis offers a description about the game industry, which can be interesting to many industry actors, even to those not interested about venture capital.

1.2 The purpose of the thesis

The general purpose of this thesis is to create an understanding of VC dynamics in the Finnish game industry and especially the VC investment criteria. The phenomenon is described and defined in terms of established research.

The theoretical purpose of the thesis is to identify and describe the investment criteria used by VCs as well as analyse and discuss VC investing in game companies based on established theories and previous research. The theoretical purpose can be expressed in the form of the research question: *Based on previous literature, what criteria do VCs use in making investment decisions in game companies?* This question is supported and complemented by the subquestions: *What criteria do VCs use in the screening and evaluation of potential investments and what are the industry specific special characteristics of used criteria in the game industry?*

The empirical purpose of the study is to illustrate and analyse the criteria used by Finnish VCs in making investment decisions in the Finnish game industry. The main empirical research question is: *What criteria do Finnish VCs use while making investment decisions about whether to invest or not in a Finnish game company?* The empirical results are compared with and reflected upon the theoretical part.

The underlying processes and business logic of both the VC industry and the game industry need to be understood and described to be able to answer the research questions in a meaningful way. The framework of this thesis is the Finnish VC industry and the Finnish game industry.

1.3 Methodology and method

The methodological approach of the thesis is empirical and descriptive. The thesis falls into the tradition of *'managerial-oriented venture capital research'*, which approaches

VC activities from the micro-perspective in contrast to '*market-oriented venture capital research*', which has a macro-perspective (Landström 2007, 17). The larger framework is nonetheless finance.

Venture capital research can be categorised in research on the fund-raising process of the VCs, the investment process, management of portfolio firms and the exit-phase (especially performance) of investments (Cannice et al., 2016, 4). This study can be categorised as research about the investment process, and although topics related to the management of portfolio firms and the exit-phase are mentioned, they are not in the focus of the thesis and not covered in detail. The fund-raising process, i.e the relationship between the original, limited-partner (LP) investors is not covered at all.

This thesis focuses on private or institutional venture capital, not corporate VC or business angels. This is to focus the thesis, since corporate VCs and business angels operate on slightly different logic, the dynamics are different, and they are not as significant part of finance as private VC. (Landström 2007, 5-10; Lehtonen 2011, 14-20)

Although VCs usually use equity instruments (Tyebjee & Bruno 1984; Lehtonen 2011, 11-12), this thesis does not exclude other formal instruments. The instruments and contracts themselves are not the topic of this thesis, but instead the criteria used prior to an investment decision. For example, two of the funds studied in this thesis, Mediatonic (Mediatonic.fi 2017) and Visionplus (Visionplus.fi 2017), use a revenue share debt instrument for investing. The focus of this thesis is on the criteria used to evaluate whether to invest at all, not how the investment is technically or judicially carried out.

The study is qualitative, and the empirical part is based on expert interviews. The aim is to obtain deep insights into the topic, not to just categorise a large amount of answers. Thus five VCs are interviewed along with one interview from the national Finnish Game Industry Association, Neogames.

In the Finnish accounting and finance research tradition this kind of approach is classified as action-oriented¹. The aim of the approach is a thorough understanding of a phenomenon. Since the action-oriented approach is used to study social - and thus inherently subjective - phenomena, the methods of the approach are not fixed or even clearly defined, compared to for example nomothetic research. Every phenomenon requires a specifically designed method of study. In action-oriented research it is accepted that the generalisability and objectivity of the research are limited. (Neilimo & Näsi 1980) However, given the context, some theoretical generalisability can be achieved (Lukka & Kasanen 1995).

The empirical method of the thesis is the interview. Since the empirical purpose of the study is to find out which criteria VCs use when investing into entertainment software companies in Finland, one needs to capture the thoughts of the people who make the

1 Toiminta-analyttinen tutkimusote in Finnish

decisions. Interviews are a feasible method to gain a thorough understanding. A large survey might give more generalisable results, but the answers of a survey are not as deep and reflective as those of an interview. There might also be practical challenges in getting a large enough answer rate for a survey. The interviews are semi-structured, with also open-end questions. (Saaranen-Kauppinen et al. 2009)

The main subjects for the interviews are managers of VC funds, who have first-hand experience on investment decisions on game companies. Thus, the interviewees will be describing their own decision criteria, along with organisational criteria. The representative of the Finnish Game industry association, Neogames, and 1-2 representatives of game developers are also interviewed for triangulation, a verification of the investor's views on the industry and a more holistic understanding of the subject. The interviews last from 30 minutes to even 2 hours. The interviews are analysed in depth, reflecting and comparing them to the theoretical findings of the study.

Prior to the interviews, the participants are explained the benefits of the study, explained their right to abort the interview and disclose information from the thesis. All participants should give their informed consent to the study. The study does not contain deception. According to the researcher's best judgement, the thesis fulfills the requirements of ethical research. (Blumberg, Cooper & Schindler 2008, 156)

The theoretical part of the thesis consists of a rather traditional literary review (see e.g. Blumberg et al. 2008). In the review, relevant theories are identified and previous research on the field is summarised. There seems to be no direct research on specifically VC investment criteria while investing into game companies. Venture capital in general has rich research traditions, and established theories exist along with newer applications, (Šimić 2015, Berglund 2011, Martel 2006, Kaplan & Stromberg 2004, Boocock & Woods 1997, Muzyka et al. 1996, Fried & Hisrich 1994, Rah et al. 1994, Hall & Hofer 1993, Roure & Keeley 1990, Hisrich & Jankowicz 1990, Robinson 1987, MacMillan et al. 1987, MacMillan et al. 1985, Tyebjee & Bruno 1984) although venture capital activities are inherently rather practical.

As interview subjects, the researcher tried to identify experts in the field. All of the interviewees have participated in an investment into a game company. Practical experience is interpreted as a sign of at least some sort of expertise in the field. In the case of the interviewed investors, it is assumed that as rational actors, the limited partners (LPs) - mainly large institutional investors - would not hand their wealth to funds they do not judge credible. In the case of developers, it is assumed that having received funding demonstrates at least some understanding on VC investment criteria. The Finnish Game industry association Neogames was chosen because it is plausible to assume that an industry association accumulates expertise from behalf of its members.

The interviews were semi-structured. This means that the researcher had a list of aiding questions ready for all participants. This list possibly acted as a catalyst for deeper discussion.

1.4 Structure of the thesis

The structure of the thesis is illustrated in Figure 1. The main focus of the thesis is on venture capital investment criteria, in the framework of the game industry.

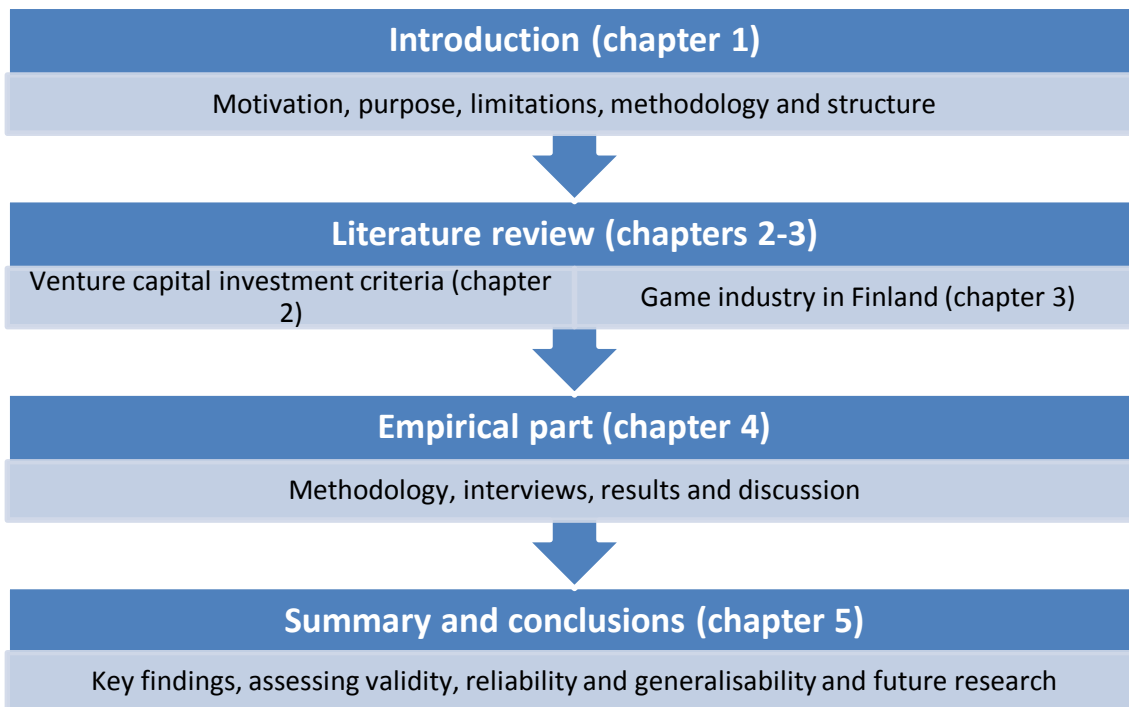


Figure 1 - Structure of the thesis

The second chapter summarises and discusses established financial theories and previous research on venture capital and VC investment criteria. The Finnish VC landscape is also briefly outlined. The third chapter describes the nature of the game industry, especially in Finland and reflects on the possible specific characteristics of VC investment criteria in the game industry, based on the findings of the second chapter. The fourth chapter is the empirical part, in which the method is described in detail, the results presented and discussed. The fifth chapter summarises the thesis, concludes with key findings, assesses validity, reliability and generalisability and discusses possible future research.

2 VENTURE CAPITAL INVESTMENT CRITERIA

2.1 Overview of venture capital

2.1.1 *Rationale for VC activities*

This thesis is focused on the investment criteria VCs use, but it is necessary to understand the basic outlines of the whole venture capital industry, since all investment decisions are affected by the context. This chapter outlines the reasons for the existence of VCs and the general function they perform in the economy.

Although venture activities are as old as commerce itself, the first modern VC fund is often cited to have been the American Research and Development Corporation (ARDC), founded in 1946. It is worth to note that the fund was specifically founded to finance new technology ventures. (Landström 2007, 11) Also other VC funds began in the 1940s in the US. Venture capital activity surged in the 1970s and 1980s and has since diversified and found new forms.² Nowadays venture capital is an integral part of a developed financial system and economy. (see e.g. Landström 2007, 10-15; Smith & Smith, 2000, 496, Amit et al. 1998).

Why do venture capital firms exist? Why is there a need for specialized financial intermediaries for entrepreneurial companies? Why do not the start-up firms collect investments directly from investors or acquire only bank loans? According to Berglund 2011 (121) *The venture capital industry can be seen as part of the increasing division of labor and specialization that characterizes most economic development.*

What are the specialisations of VCs then? If one uses the agency-theory as a context, one stated reason is specialisation in incentives management. Investors and entrepreneurs raising capital might have different objectives. An investor craves return, but the entrepreneur might aim for high personal returns such as recognition or building his network or just living lavishly for a couple of years. A firm receiving an investment has - from the point-of-view of the investor - a risk of behaving in a non-desired manner. (Lerner et al. 2004, 4-6) A venture capitalist can be seen as a specialised actor in controlling incentives. This can be done through participating in the management of the company, covenants and rules, scrutiny and other means. A specialised venture capitalist has better possibilities for this than other investors. (Clerq & Manigart 2007)

² For a summary on the history of VC activities, see e.g. Landström 2007, 10-15.

Amit, Brander and Zott (1998) on the other hand conclude that the rationale for venture capital is information asymmetry. Adverse selection and moral hazard lead to market failure in the financial markets for entrepreneurial firms. For a single investor, overcoming these informational problems would not be worth the cost. For a bank, the scope of industries is too wide. Venture capitalists decrease the acuteness of these market failures by various means, mainly by specializing in one industry, corporate life-cycle phase, geographical area or such. In some industries, high expertise, i.e. lower information asymmetry, can lead to better returns for the investor and lower cost of capital for the firms. This is because having more information means lower risk-premiums. This implies, according to Amit et al. (1998), that venture capital activities are justified in sectors which require lots of specialised information, such as biotechnology and computer software rather than “conventional” sectors such as retail. The logic is agreeable, and it is plausible to claim that the game industry is a sector, where specialised expertise has an effect, due to its vast number of differentiated products and close relationship to quickly changing technology.

To control the risks mentioned above, or to *mitigate agency conflicts* as Gompers and Lerner (2004, 160) put it, venture capitalists use several methods. These include active monitoring and advice, screening mechanisms, incentives to exit, proper syndication of investment and the staging of the investment. (Gompers and Lerner 2004, 160; Keegan 2008, 161-162). Keegan (2008, 162) adds compensation arrangements to this list.

For the investor, the final reason to take part in VC activities is of course return. There has long been debate about whether VC activities in general are a profitable endeavor compared to other investments. Although the returns are difficult to measure objectively, VC activities in the US seem to yield well, with average 10 years period (1994-2004) annual returns of 25,4 %. The newer European VC industry seems to perform poorly, with returns of only 5,3 % (1995-2005). (Leleux 2007, 245-250) Certainly some VC funds are very profitable, and the continued existence and growth of the industry proves that a large number of investors has gained and believes to gain satisfactory profits from VC funds.

The reasons above explain why venture capital is supplied. But why do entrepreneurs need venture capital? Why do they not prefer direct equity or debt finance? Usually this is simply because these cannot be acquired for a variety of reasons. Gompers and Lerner (2004) state that there are four critical factors that entrepreneurs face, which limit their access to traditional finance: *uncertainty, asymmetric information, nature of the firm assets and the conditions in the relevant financial and product markets* (Gompers & Lerner 2004, 157-158). All of these limit the entrepreneurs access to traditional capital. Firstly, new or restructuring companies face uncertainty in many ways: competition, markets, operations, personnel risks and so forth. Secondly, as explained above, asymmetric information limits the investor's willingness to invest unless there are several mechanisms to

alleviate the asymmetry. Thirdly, new or restructuring companies also lack assets which act as a collateral - a crucial element in debt finance. Even if the company had operated for a while, assets might be intangible instead of tangible. Fourthly, the market conditions might be such that capital is limited. Some product or capital markets are very volatile. The game industry meets all these four criteria.

In addition to being compelled to raise venture capital, the entrepreneur might also see positive sides in partnering with a venture capitalist. The venture capital firm might bring in expertise, access or networks beneficial for the entrepreneur. (see e.g. Gompers & Lerner 2004; Baum & Silverman 2004; Clerq & Manigart 2007, 194-211; Busenitz 2007, 219-220; Thompson 2008, 104-106) A VC investment does indeed seem to correlate with better firm performance (Baum & Silverman 2004; Busenitz 2007, 219; Colombo & Murino 2017), although there is also research, which claims that VC activities do not add value (Busenitz 2007, 219) Nonetheless, the better performance of VC backed ventures is probably due to both a cause and an effect: VCs invest only in viable businesses with competent entrepreneurs, but VCs also contribute in the firm's success by providing credibility, networks and expertise along with capital. This in turn reflects the specialisation of the VC, discussed in more detail in the next chapter, after describing the general functioning, structure and process followed of VC's.

2.1.2 Functioning and structure of VC funds and the VC process

This chapter explains the functioning and structure of VC and the process VCs typically follow. Venture means a "risky undertaking". Venture capital refers to a form of private equity investing, where the target investments are startups or other smaller companies and the risks and profit possibilities are relatively high (Gompers & Lerner 2004; Landström 2007, 5-6). Thus, investing is "venturing" to the unknown. Usually venture startups are characterised with new technology (Gompers and Lerner 2004, 515-517).

As discussed earlier in the previous chapter, during different stages of development, companies encounter phases where bank lending is not available. This is due to the high risk of the investment. Bank loans usually require collaterals. Companies at a certain stage might not have a past that would make it possible to feasibly predict the future - either the company is very young or entering a new market. As discussed earlier, venture capital enters to fill this gap. As illustrated below in Figure 2, venture capital is a source of funding usually for companies in the startup, growth and early expansion phases of a company's life-cycle (see e.g Gompers & Lerner 2004; Landström 2007, 5-6; Ahokas 2012, 8-10, 31-33;).

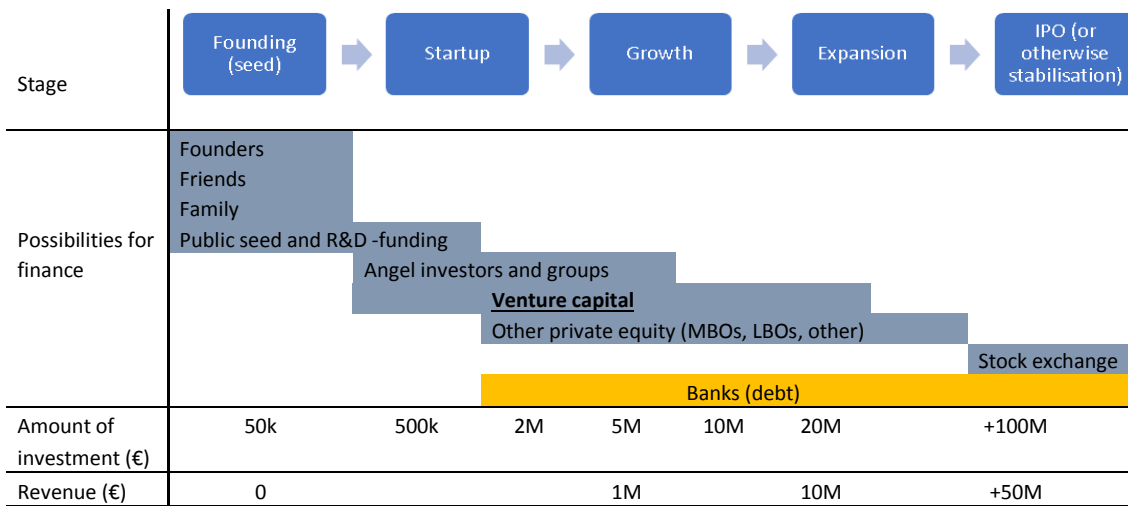


Figure 2 Stages of firm development and finance (own illustration, based on Ahokas 2012, 6)

Note that Figure 2 is only an abridged and simplified illustration, and the investment and revenue sums are inaccurate approximations, only meant to demonstrate the rough scope. As seen from the figure, in the founding or seed phase the founders, friends, family and perhaps public funding are the typical source for finance. When approaching the startup phase, when the company already has more structure or perhaps a prototype or some initial sales, angel investors or groups become a more valid possibility, along with some early stage VCs. In the later startup and growth phases VC is already a very viable possibility. In the later growth and expansion phases private equity investors join with instruments such as leveraged buy-outs, management buy-outs or growth capital, and finally finance can be sought from the public via an IPO. Banks usually enter when the company has some revenue and require collaterals.

Like other investment funds, VC funds pool investments from a variable number of original investors, such as pension funds, foundations, insurance companies or wealthy individuals. Investors invest funds into the VC fund for a certain period of time and get compensated according to the performance of the fund. The VC fund invests in different venture firms, manages them and gains a return based on the success of these investments. Venture capitalists engage in several different investments, i.e build a portfolio like conventional investors, and try to exit with a substantial profit at some point, usually through an IPO (initial public offering) or selling the investment to a larger corporation. (see e.g Gompers & Lerner 2004, 1-6; Cumming et al. 2007; Lerner et al. 2009; Berglund 2011). Figure 3 illustrates the functioning of a VC fund on a general level.

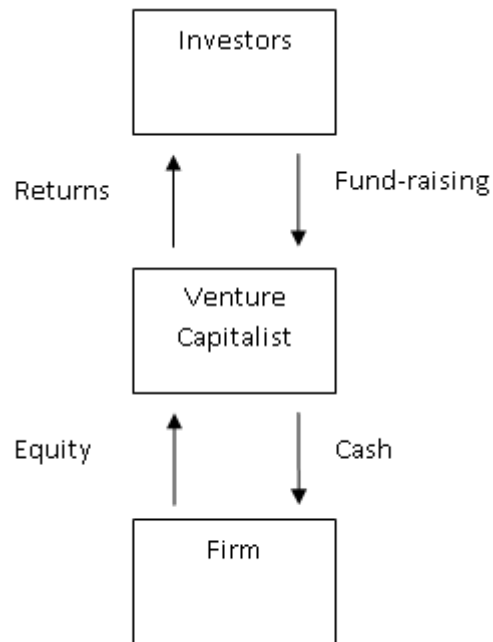


Figure 3 Overview of the venture capital process (Gompers & Lerner, 2004; Landström 2007, 6)

The investors invest in hope of returns, but outsource the investment decision-making and management of investments to the venture capitalist. The VC provides the cash for growth for the firm, which in turn hands over some equity to the VC, to be turned into cash with the exit. The profits are then mostly returned to the original investors. The VC process is explained in more detail later on.

Understanding the fund-raising of VC funds is needed in understanding their actions as investors. The important factor is that most VC funds are temporary, typically for around 10 years, according to Cumming et al. (2007, 162) and 5-10 years according to Landström (2007, 3). This creates an urgency into their behavior as investors. Time is essential for the VC fund and thus for the evaluation of the companies they decide to invest in. This is why VCs need to know that there is a feasible possibility for an exit within a certain number of years. This means that the venture needs to be in a certain phase of development, and ventures in the seed phase or still in research and development are usually not possible investments for VCs. (Gompers & Lerner, 2004, 23-32; Parhankangas 2007, 253-260).

An established organisational form for VC funds is usually a limited partnership³, where the original investors are the limited partners and the venture capital firm the general partner, which manages the fund. The fund then invests the capital into different in-

³ In Finland, the corresponding, widely used vehicle is kommandiittiyhtiö (KY).

vestments, manages them and collects possible profits, which are distributed to the investors according to the investment contracts. The VC firm gains its revenue usually from a fixed asset management fee and a commission based on the performance of the fund, although most often the VC firm also has an investment in its own funds. (see e.g. Sahlman 1990; Smith & Smith 2000, 499-506; Cumming et al. 2007). Figure 4 illustrates the structure of a typical VC arrangement.

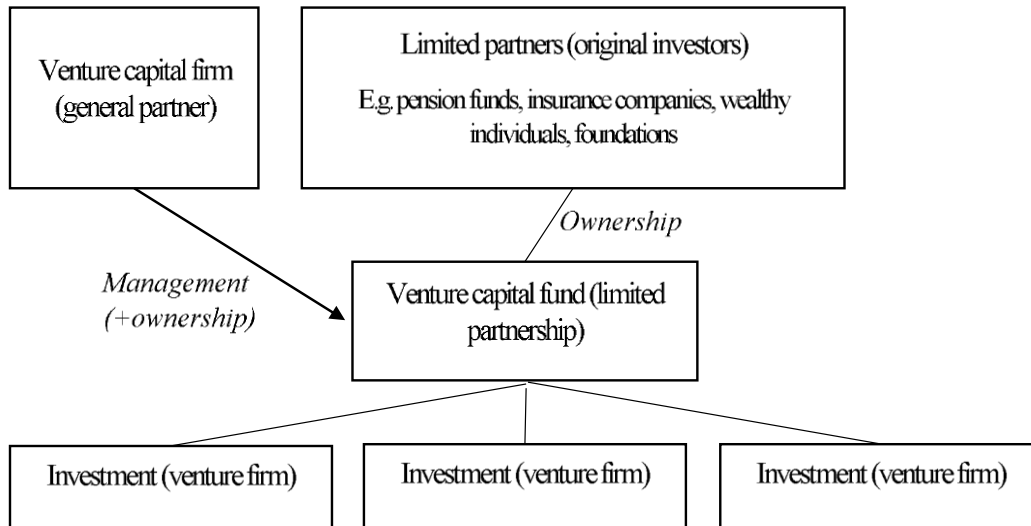


Figure 4 Organisational structure of a VC fund (own illustration according to Smith & Smith 2000, 500)

As Figure 4 shows, the venture capital firm, i.e. the general partner and the limited partners own a limited partnership, the VC fund, coupled with the necessary contracts, such as the rules of investing and providing of capital. Most of the capital is provided by the LPs, which is why they own most of the fund. The VC firm, i.e. general partner is an owner with a small share to signal commitment and to create an incentive. The VC fund is the legal entity which deals with the ventures, although it might not have any employees, which judicially work for the general partner. The ventures are own legal entities.

The venture capital operating process is considered rather uniform and well documented (see e.g. Tyebjee & Bruno 1984; Gompers & Lerner 2004; Zacharakis & Shepherd 2007, 177-178; Lehtonen 2011; Ahokas 2012, 30-31) Figure 5 Venture capital process (own illustration, see e.g. Figure 5 illustrates the VC process.

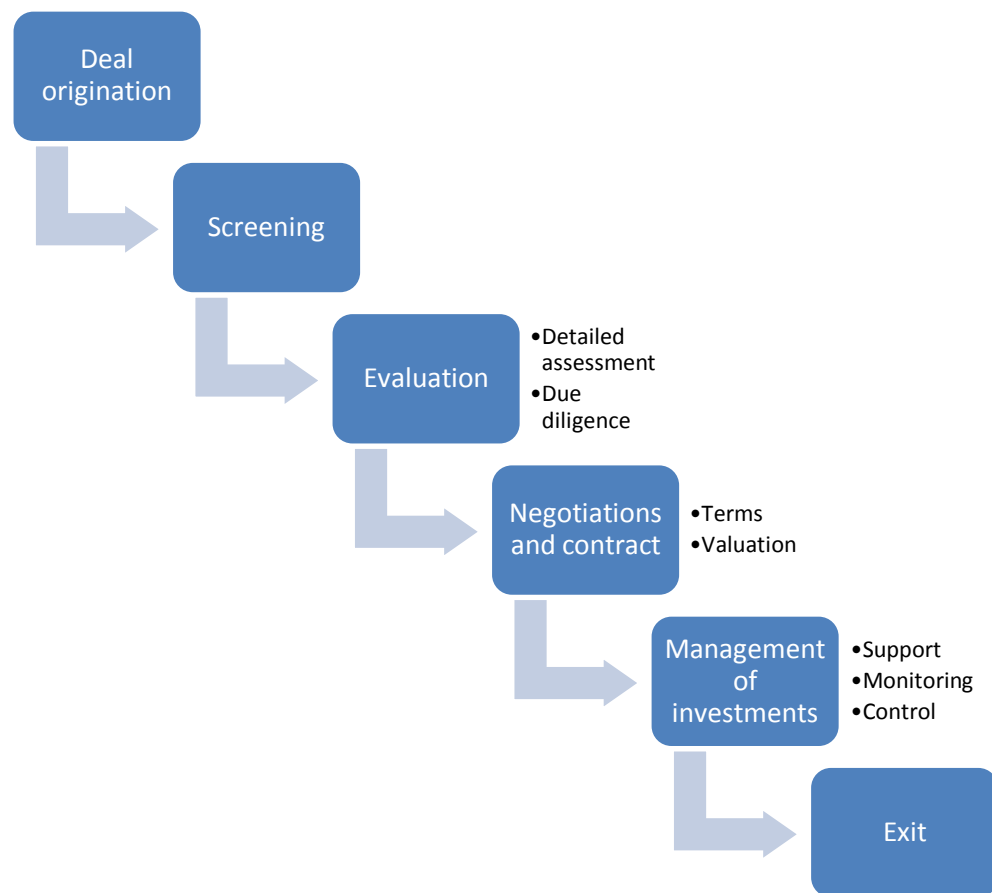


Figure 5 Venture capital process (own illustration, see e.g Tyebjee & Bruno 1984; Gompers & Lerner 2004; Zacharakis & Shepherd 2007, 177; Lehtonen 2011; Ahokas 2012, 30-31)

Firstly, VCs generate and receive a deal flow, a vast number of investment proposals, typically hundreds or even thousands a year. Secondly, the VC screens these proposals for the most promising ones based on business plans and other information. Only a small minority of proposals pass the screening. Thirdly, the proposals deemed most promising are evaluated in detail before the possible investment decision. The evaluation includes for example detailed research on the firm, product and markets and interviews with the entrepreneurs. Only very few of the screened proposals pass the evaluation phase. If the VC decides to invest into the venture, a legal, financial and possibly technical due diligence is undertaken. In investment decisions, due diligence is an important part of managing risks (see e.g Tinsley 2000, 119). If the due diligence reveals no problems, the actual investment negotiations can take place, where the VC and the venture agree on the terms of the investment, e.g valuation⁴ and the VCs possibilities to influence the venture. If an agreement is reached, the VC then buys some share of the venture's equity, or makes

⁴ For a detailed discussion on firm valuation, see e.g Damodaran 2011 or Keegan 2008.

an equivalent arrangement⁵. Fourthly, the VC monitors, controls, manages and supports the venture by providing for example access to networks and expert advice. Finally, the VC aims for a profitable exit where the equity is turned into profit, usually either through an IPO or by selling the venture to a larger corporation. Then the VC goes on either by returning the profits to the limited partners or re-investing the funds, depending on the running time of the fund. (Tyebjee & Bruno 1984; Gompers & Lerner 2004; Zacharakis & Shepherd 2007, 177-178; Lehtonen 2011; Ahokas 2012, 30-31). Usually a very few proposals received by the VC close a deal for funding. The VC deal filtering process is illustrated in Figure 6 below. Note that the numbers are once again general approximations of the general ratio, and different VCs have different ratios between the stages, also at different times.

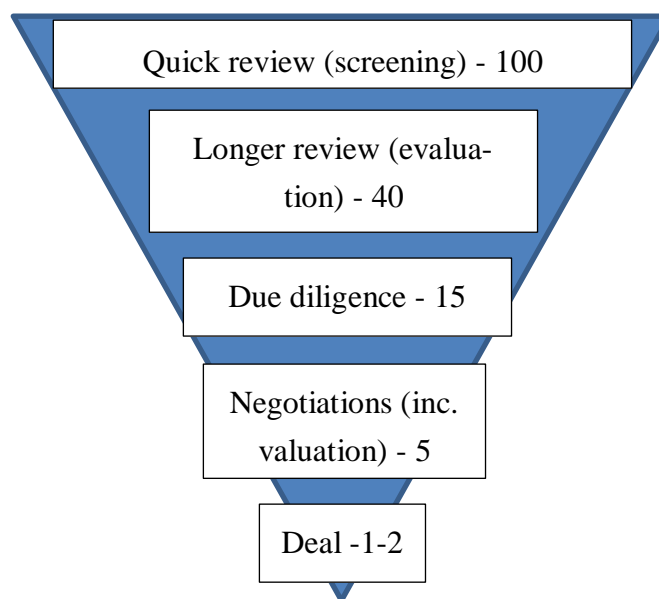


Figure 6 - Venture capital deal filtering process (own illustration according to and complementing Albers 2006).

In Figure 6, the number after the stage refers to the amount of proposals entering that particular phase. In general and in rough terms, for every 100 investment proposals arriving to the VC, perhaps less than half are evaluated in greater detail. Less than half of these are investigated in a due diligence. After the due diligence, only one third enters negotiations with the VC and finally only 1-2 out of the initial 100 close a funding deal with the VC.

A VC firm often hosts several VC funds at the same time or in sequence, leveraging on the expertise, knowledge, networks and reputation of the managers (Cumming et al. 2007, 162) Reputation in the form of firm age and size is a positive factor in raising capital

⁵ For example, convertible bonds can be used in VC arrangements (Ahokas 2012, 53-55).

for the venture fund (Gompers & Lerner, 2004, 63 This thesis focuses on the criteria used in the screening and evaluation phases of the process, and thus the other phases are not discussed in detail. Prior research on the investment decisions, that is phases ‘screening’ and ‘evaluation’, is reviewed in chapter 2.2. Figure 7 below illustrates the relations between different actors in the VC process.

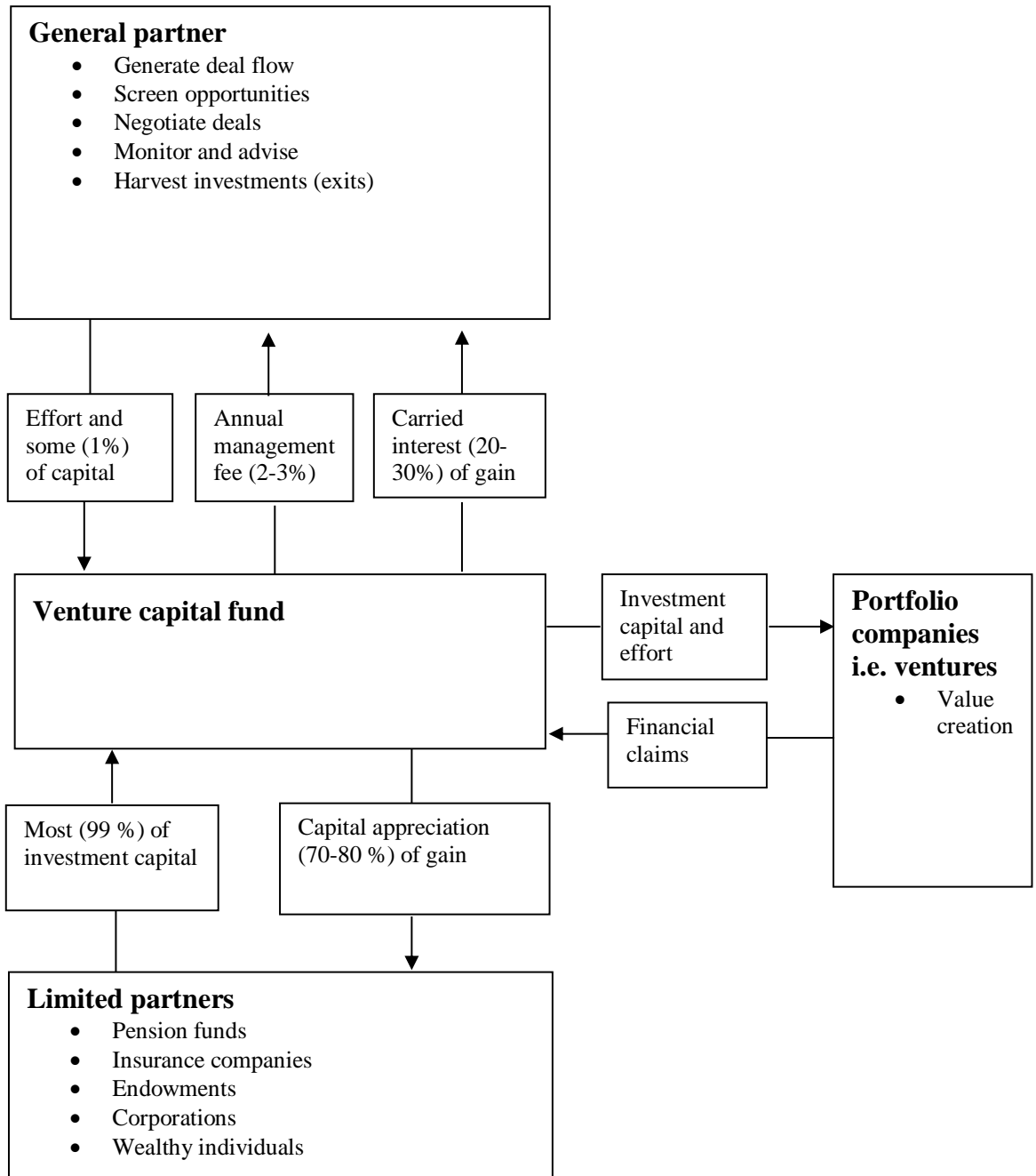


Figure 7 Venture capital relations (adapted from Smith & Smith 2000, 500)

Note that the percentages are simplified approximations of typical ranges, not exact facts. As seen from Figure 7, the VC firm, i.e. the general partner, is responsible for the whole VC process, and in return gains a management fee and some proportion of profits from the VC fund, the limited partnerships. The investors, i.e. the limited partners provide most of the capital and thus reap most of the profits, but have almost no role in picking or managing the investments. The VC fund provides capital and supportive effort to the ventures, i.e. portfolio companies, who create value and return some of it to the VC fund in the exit. The exact amount is determined between the venture and the VC fund in negotiations.

The VC and the entrepreneur need to come a conclusion about the amount invested and the share of equity this justifies for the VC. Thus, a valuation of the venture is needed. Valuation means defining the monetary value of a target company. In finance theory, valuation has been studied thoroughly and extensively (see e.g. Brealey & Stewart 2003; Damodaran 2011). A detailed analysis on valuation is out of the scope of this thesis, but needs to be briefly discussed to understand the VC process. As Smith & Smith (2000, 228) put it, *the value of the any investment depends on its ability to generate future cash flows, as well as on investors assessments of, and attitudes toward, the riskiness of the future cash flows*. Valuation has two basic principles: that money is worth more today than in the future (time-value of money) and a more certain money is worth more than uncertain (risk) (see e.g. Smith & Smith 2000, 234) Valuation has often been called as much an art as a science (see e.g. Keegan 2008, 12). This refers to the fact that it is almost impossible to conduct without the use of significant subjective assessments, since valuation deals with the future prospects of a company. The future naturally is subject to countless human - inherently subjective - decisions and actions. With early stage firms this is even more so, since there is no historical data. This does not mean that valuation cannot be supported by science and methodology. On the contrary, valuation is a major field of research in finance and complicated mathematical and other methods exist.⁶

There are several methods of valuation, differing in their theoretical approach and practical applications. Valuation is inherently a subjective pursuit, especially with new ventures, where there are no markets to refer to. The International Private Equity Valuation Guidelines (2015), a standard used internationally in the industry, states: *“In determining the Fair Value of an Investment, the Valuer should use judgement.”* The established methods of valuation can be divided into three categories: cost-based, market price-based and cash flow-based valuation methods. The academically correct ways are based on discounted cash-flows, but in practice a variety of methods are applied. (see e.g. Brealey & Myers 2003, 346; Hillier, Grinblatt & Titman 2008, 305-306)

⁶ For a detailed discussion on firm valuation, see e.g. Damodaran 2011 or Keegan 2008.

Although the functioning and structure of VCs has been found to be fairly similar, VCs are not homogenous, but instead try to find competitive advantage by specialising. There is a large variety of VCs and practices (Cope et al. 2004). Firstly, VCs specialise in terms of for example industry, geographical area or company life-cycle. They accumulate expertise and knowledge and leverage it in both picking great ventures to invest into and to support these ventures. Secondly, VCs specialise in the different phases of their process, others striving to excel in the evaluation phase of picking only the best possible investments while others focus on the management of portfolio ventures. (Baum & Silverman 2004; Clerq & Manigart 2007, 193-194) For example Baum and Silverman (2004) call these the 'scout' and 'coach' roles of VCs, and suggest that different VCs have different focuses and strengths with respect to these roles. Berglund (2011) uses a categorisation of *investor*, *coach* and *partner* type of VCs. The investor focuses on the investment process but is rather passive in the management of the VC, the coach focuses in mentoring the entrepreneurial team and the partner actively uses available resources, such as networks in supporting the VC. Interestingly, Berglund (2011) finds differences in Scandinavian (Göteborg, Oslo and Stockholm) and Californian (Palo Alto, San Jose and San Francisco) VCs. According to his study, Scandinavian VCs tend to be more distant investors whereas Californian VCs strive for a more comprehensive and close partnership.

If it suits the specialisation of the VC, many times venture capitalists engage in various supportive actions, acting almost like consultants, mentors and supervisors in addition to being providers of capital. (Gorman and Sahlman 1989; Clerq & Manigart 2007, 194-211; Busenitz 2007, 219-220; Thompson 2008, 104-106) For example, the research of Hellmann and Puri (2002) on Silicon Valley start-ups finds that venture capital is related to several professionalisation steps in new companies, such as hiring a marketing VP and developing human resources policies. Leleux (2007) mentions development of business plans and assistance with recruiting and compensation management as examples of value adding activities. Hellmann and Puri (2012) express the issue in the following manner: "On a theoretical level, we need to recognize that investors may gather information not merely *about* firms, but also *for* firms."

As David Gladstone, a long-term venture capital practitioner puts it in his practical guide-book, *Venture capital investing - The complete handbook for investing in small private businesses for outstanding profits*: "It's not an investment, it's a partnership". Practitioners even have a colloquial term for investing time and expertise instead of only capital: "sweat equity". One could also claim that VCs act quite much like consultants, pooling expertise from their various investments and helping the investments by offering managerial, marketing and other advice. The difference to consultants of course is that VCs often have and use straightforward stockholder power to steer the company to the direction they want – more akin to conglomerates. In any case, much of the VC competitive advantage is tightly related to the fact that the VC is able to give more input to the

firm than only capital. As mentioned earlier, previous research seems to conclude that VCs actually do this (Baum & Silverman 2004; Busenitz 2007, 219; Colombo & Murtino 2017), although the research is not altogether conclusive (Busenitz 2007, 219)

No matter how well the VC picks the investments and managements, venture capital activities are always highly risky. A majority of new businesses fail, and it is up to the few that succeed to bring in the profits. This is why every VC needs to have a portfolio – like other investors. After all, as already Markowitz (1952), showed, return in relation to risk is maximised with a proper portfolio (see e.g Bodie, Kane & Marcus, 1999, 149-156; Markowitz 1959, 6).

Normally investors try to diversify non-systematic risk away and control portfolio risk by hedging - often in everyday life called insurance (Bodie, Kane & Marcus, 1999, 156). Insurance aims at controlling the negative outcome of asset return volatility. Diversification aims at controlling portfolio volatility itself. In practice, diversification means investing in a variety of different assets that differ for example by security type, industry, geographical area, time span or company size - any attribute that reduces the volatility of the overall portfolio. This naturally requires that the assets correlate with each other as little as possible. In this manner, asset-specific risk can actually be reduced next to zero, leaving only nondiversifiable or systematic risk (Bodie, Kane & Marcus, 1999, 202). However, as explained earlier, a VC's competitive advantage comes from specialising in for example a certain industry, geographic area or company size, (Baum & Silverman 2004; Clerq & Manigart 2007, 193-194) making traditional diversification counter-productive. Nonetheless, it is important to remember that VCs make investments that suit their portfolio and investment strategy, not isolated investments.

2.1.3 *Venture capital industry in Finland*

This chapter outlines venture capital in Finland, contributing to a holistic understanding of the topic. As mentioned earlier in chapter 2.1.1, venture capital developed in the US and spread worldwide (Bruton et al 2005; Landström 2007, 10-15). The European and Finnish VC market has until very recently been comparatively small (Gregoriu et al. 2007, 6-7; Landström 2007, 13-14). Bottazzi and Da Rin (2002) suggest that the underdevelopment of European VC was partly due to generally more underdeveloped financial markets, which for example provide less possibilities for exits through IPOs (Initial Public Offering). This applies to Finland as well.

In the beginning, the Finnish VC industry was mainly driven by the public sector. The first VC actor in Finland was Sponsor, a private equity fund founded by the (Central)

Bank of Finland in 1967 (Luukkonen 2006, 2).⁷ Growth has been substantial during the past few decades. In Finland, the total sum of VC investments by Finnish private equity firms grew from just €27 million in 1996 to €121 million in 2016 (FVCA 2017). Nowadays, the Finnish Venture Capital Association has 63 members (FVCA.fi 2017).

In 2016, the Finnish VC market activity was significantly above the European average, measured in venture capital investments as a percentage of GDP. In 2016, the figure was 0,051 % in Finland, while the European average was 0,027 % of GDP. The annual fluctuations are large, but nonetheless Finland is in general above average in VC activity compared to GDP. (Invest Europe, 2017)

Finnish VCs invested €121 million into 195 growth-companies in 2016 and raised €114 million of funding for future investments 34 of these investments were seed investments, 107 startup investments and 59 early growth investments. This was within the typical annual range. During 2007-2016 the least investments were in 2011, 136, and the most, 210, in 2014. Most of these investments went to Finnish companies, for example in 2016 159 investments went to Finnish companies and 36 foreign and €80 million and €40 million respectively. The investments were on average a little less than €1 million for the early growth investments, about €700 000 for the startup investments and over €200 000 for the seed investments. (FVCA 2017)

In recent years, Finnish startups have been successful in attracting venture capital. In 2016, in total of 169 Finnish companies received investment from Finnish or foreign VC firm. The investment amount totaled €111 million. In 2015 the numbers were 172 and €122 million, respectively. On average, Finnish startups attract the most venture capital in Europe between 2012-2016. (FVCA.fi 2017) In 2016 Finnish and international VC firms exited 37 Finnish companies (FVCA 2017). In conclusion, the Finnish VC market and industry has risen from humble beginnings to a comparatively dynamic present.

2.2 Previous research on venture capital investment criteria

2.2.1 *Traditional research on venture capital investment criteria*

This chapter focuses on the actual topic of this thesis, venture capital investment criteria and reviews previous research on what criteria do venture capitalists in general use for assessing investments. The field has been studied in quite a depth and scope (Šimić 2015, Sharma & Sharma 2015; Martel 2006, Kaplan & Stromberg 2004, Boocock & Woods 1997, Muzyka et al. 1996, Fried & Hisrich 1994, Rah et al. 1994, Hall & Hofer 1993,

⁷ For an overview of the Finnish VC industry before 2006, see e.g. Luukkonen 2006.

Roure & Keeley 1990, Hisrich & Jankowicz 1990, Robinson 1987, MacMillan et al. 1987, MacMillan et al. 1985, Tyebjee & Bruno 1984). Previous research on venture capital investment criteria can be divided roughly into two main segments: survey and interview research on the VC investment criteria themselves and critical research on the limitations of the previous studies. We start with the conventional studies and then discuss more critical research, which complements the results of conventional studies.

In a working paper by Martel (2006) provides a comprehensive summary on relevant studies until 2006. He concludes that prior research finds that, in order of importance, the most important selection criteria are: "-- *the competency of the management team, the attractiveness of the market, the attractiveness of the opportunity (service or product), and the deal's terms.*" Martel's summary on 20 previous studies are summarised in Table 1 below.

Table 1 Information factors used in VC decisions (Martel 2006)

Information factors used in VC investment decisions																				
Study	Wells (1974)	Poindexter (1976)	Ruby (1984)	Tyebjee & Bruno (1984)	MacMillan et al. (1985)	MacMillan et al. (1987)	Siskos & Zopounidis (1987)	Robinson (1987)	Timons et al. (1987)	Hisrich & Jankowicz (1990)	Roure & Keeley (1990)	Dixon (1991)	Hall & Hoffer (1993)	Rah et al. (1994)	Fried & Hisrich (1994)	Muzyka et al. (1996)	Boocock & Woods (1997)	Zacharakis & Meyer (2000)	Boehm (2002)	Kaplan & Stromberg (2004)
Entrepreneur/Team Characteristics		X			X	X	X	X	X				X		X			X	X	X
Mgmt. skills/leadership		X	X	X	X	X	X	X	X	X	X	X	X	X		X	X			
Completeness of team					X		X				X				X					
Marketing skills											X	X		X						
Mgmt. financial skills																				
Mgmt. stake in firm		X		X								X		X						
Articulate about venture	X				X	X		X												
Personal motivation	X							X						X						
Capable of sustained effort					X	X								X						
Ability to evaluate risk					X	X								X						
Relevant track record				X	X	X		X	X	X	X			X			X			
Market familiarity				X	X	X			X					X						
Entrepreneur personality	X				X									X	X					
References							X							X						
Product/service characteristics		X																X		
Product attributes				X	X	X								X	X					X
Proprietary	X		X	X	X	X		X	X			X		X						
Uniqueness/differentiation	X		X	X			X	X	X					X			X			
Technical edge/innovation				X						X				X						
Stage of development		X		X			X				X						X			
Technology life cycle				X					X											
Expected profit margin				X																
Project growth in turnover												X								
Resistance to risk				X																
Scalability																				
Barriers to entry				X					X											
Product superiority											X			X						X
Existing customer base	X																			
Market acceptance/interest				X	X	X								X						
Potential for partnerships																				
Prototype/R&D level					X		X		X											
Market characteristics		X			X													X		X
Market size	X		X	X					X				X	X	X	X			X	
Market growth potential			X	X	X			X	X			X		X	X	X	X			
Projected market share												X								
Competitive strength/number					X	X			X		X								X	
Sensitivity to business cycles				X			X													
Buyer concentration											X									
Venture creates new market					X											X				
Financial characteristics		X																X		X
Cash-out method				X			X						X							
Expected rate of return		X		X	X				X						X	X				
Expected risk		X																		
Percentage of equity		X																		
Investor provisions	X	X																		
Size of investment				X											X		X			
Funding base	X									X										
Liquidity of investment				X	X	X		X												
Valuation																				
Other																				
Continuity of company										X										
Geographic location																	X			

As seen from the table, the variety of different criteria is vast, and for research purposes different nuances have been categorised in the studies. In the table, the "X" marks a criteria found in the mentioned study.

All of the studies since the first known study (an unpublished doctoral dissertation) by W.A. Wells in 1974 from Carnegie Mellon University (see e.g. Šimić 2015) mention some criteria from the entrepreneurial team, the market, the product and projected financials, with the exception that Hisrich and Jankowicz (1990) do not include a market-related criterion. It is noteworthy that the method and sample of the studies has varied, which affects the result. As discussed earlier, VCs might have different criteria depending on for example industry specialisation.

Also, as reported, already Wells in 1974 (see e.g. Šimić 2015) found that VCs seem to use different criteria in the screening and evaluation phases. VCs start their analysis from broad questions such as their portfolio fit and move to more detailed ones. Thus, criteria change not only from industry to industry or VC to VC, but also within the same VC, depending on the phase of assessment.

Hisrich and Jankowicz (1990) stress the prevalence of intuition in most VC investment decisions and reminds the entrepreneur that different VCs have somewhat different criteria for investments. An entrepreneur needs to be ready to adjust the applications according to the VCs special characteristics. (Hisrich & Jankowicz 1990)

The finding about VC's multi-stage process is supported by for example Hall and Hofer (1993), who identify two key criteria for the screening stage: a) fit of the venture with the VC's practices, and b) long-term growth and profitability of the company's industry. However, in the evaluation phase Hall and Hofer (1993) claim that the key criteria change to 1) the source of the business proposal and 2) that the proposal has been previously reviewed by actors trusted by the VC.

Muzyka et al. (1996) concludes that VCs prefer opportunities with a good management team and reasonable financial and product-market characteristics even if the deal would not meet overall fund requirements. In their words: *"It appears, quite logically, that without the correct management team and a reasonable idea, good financials are generally meaningless because they will never be achieved."*

Also, Boocock and Woods (1997), studying a UK fund, find that the VCs decision-making process is multi-staged. They also state that entrepreneurs should meet certain key criteria, which are meeting the specific requirements of the individual fund, such as the size of the investment and the location of the firm; having a lucrative enough market for the product, notably in degree of competition and the growth potential of the market and having relevant management skills and commitment. (Boocock & Woods 1997) Beim and Levesque (2004) see that VCs take three broad criteria into account: unique product or market opportunity, quality of management and potential for capital appreciation.

It is interesting that the managements financial skills are not mentioned by any of the studies summarised in Table 1. This could perhaps imply that these skills are seen as acquirable later on? Another important finding illustrated by the table is that research is rather uniform on the general level – that the team, product, market and financials are relevant criteria in VC decision-making – but definitely not conclusive on a detailed level, that is what the importance of each category actually means. This probably reflects both differences in the VC population, i.e. that VCs are different and have different criteria, and differences in the method, i.e. the studies have been conducted using different methods. Also, though the results are consistent through time on a general level, the long - time-span is relevant: VC investing was probably at least somewhat different in the early 1970's than 2000's, due to economic and technological change.

Not included in Table 1, Kumar & Kaura (2003) use Kendall's rank correlation coefficient analysis and find that there is a "highly significant and strong agreement among the venture capitalists that successful venture teams are capable of putting in sustained effort." In addition, Kumar & Kaura point out that successful teams focus on identified target markets and have demonstrated past success. They also attend to "details before putting in requisite efforts" and are capable of dealing with risk due to their past experience.

Vinig & Haan (2002) compare Dutch and US VCs and suggest that the VCs in both countries agree on the relative importance of the main criteria: entrepreneur, product, market and financial. Both Dutch and US VC's consider the entrepreneur as the most important criterium. More detailed sub-criteria reveal differences. Dutch VCs rank the relative importance of innovativeness high whereas US VCs rank protected or proprietary products with high relative importance.

Table 1 contains only research up to 2006, but newer studies have similar results. For example, Khanin et al. (2008) divide research on VC investment criteria into two groups: one which considers management skills essential for the investment decision and another, which finds market size, growth rate and product quality more important than management skills. Khanin et al. (2008) identify top management, market and market growth, product, risk, return, exit, quality contracts, strategies, customers and competition as the most important criteria. Jell et al. (2010) lists the key criteria to be the attractiveness of the market, the product, the firm's financial aspects, competencies of the founder (s) and the possibility to exit from the investment.

Supporting earlier results about the multi-staged investment assessment process, Eisele et al. (2011) find that in German VCs, relative importance of criteria differs with investment stage, and deviations occur between the early and later stages. However, in all stages "*personality of management category as well as the appreciation potential of the acquired equity stake are considered crucial.*" On the other hand, Eisele et al. (2011)

claim that VCs see different market characteristics, dividend potential, and the desired independence level of management irrelevant in the decision-making process.

In his dissertation about venture capital, Lehtonen (2011) summarises, that previous research has identified the entrepreneur's industry experience, strategy focus, the entrepreneur's general characteristics, education, new venture experience, target market, product or service portfolio, the leadership potential of the lead entrepreneur and the management team as VC investment criteria.

Visagie (2011), studying UK VC funds, concludes that the order of importance of VC investment criteria is following: *Management Team, Market, Product, Scalable Business Model, Commercial Proof of Concept and Specific factors set by VCs*. Narayansamy et al. (2012) studied VCs in Malaysia and found that management integrity and exit opportunities are more important than business ideas.

In a review of previous studies by Sharma & Sharma (2015), six criteria are identified: venture team, product attributes, market size and growth and expected returns. Sharma & Sharma also state that VCs use a multi-criteria decision-making process.

In a comprehensive summary about research on venture capital investment criteria, Šimić (2015) finds that first of all, that despite the large number of studies, there is still no clear answer to what the key venture capitalists' investment criteria are. Nonetheless, Šimić (2015) outlines that the most common findings of VC criteria include the entrepreneur's personality, the entrepreneur's experience, characteristics of the product or service, characteristics of the market, financial considerations and others, such as the venture team, well thought out milestones and VC compatibility such as fund phase. Šimić (2015) also suggests new criteria for VC decision making not present in previous research: the willingness of entrepreneurs to renounce ownership, readiness to change the management, readiness for dialogue, readiness for the achievement of set goals, the VCs' intuition and "gut feeling" and personal sympathy for the management.

As one of the key findings on previous research is that literature in general seems to find that, venture capitalists and other investors openly agree that the management of the company is one of the most important factors of value (see e.g. Smart 1998, Keegan 2008, 11-12; Jin et al. 2016). The same applies to key personnel. Even with public companies, top management has an impact on the share price (see e.g. Kind & Schläpfer 2010) It is also intuitively obvious, that management and key personnel are crucial in value creation. Jin et al (2016) try to create common measurement methods and suggest human capital is valuable in terms of education, experience, knowledge and skills.

Smart (1998) illustrates that many VCs indeed have thorough human capital valuation methods, and that these methods seem to yield good results. Many VCs use thorough and rigorous methods in their human capital valuations. Naturally, the VCs with more rigorous human capital valuation methods had higher return-rates. (Smart 1998) Patzelt (2010) supports this by finding that in the biotechnology industry, education in management,

founder-based firm-specific experience, international experience, and industry specific experience of the CEO affect VC commitments. Interestingly, the team size affects the outcome in a significant way, the result being moderated by team size.

The strong emphasis on entrepreneur and team characteristics has been questioned by some research. Baum and Silverman (2004) find an overemphasis on human capital by VCs: there seems to be no correlation - or much weaker than VCs think - between venture success and the management team of the venture. They suggest this is due to a common attribution error, in which human elements are overemphasised over situational factors. Nonetheless, even though management would not be as important in reality as VCs think, it can remain a key investment criterium because the VCs believe it is important.

What are we to make of all this? Perhaps it is constructive to acknowledge as a conclusive result that there are no conclusive results on detailed VC investment criteria, because VCs themselves and the situations they operate in are different. This leads us to questions about the investment criteria of different kinds of VCs in different situations. This thesis is an example of a study focused on VC decision-making on a certain industry, but similar research on for example different stages or other differencing characteristics might yield meaningful results. However, on the broad level, previous research seems to fairly conclusively agree that the competitiveness of entrepreneur and the team, the lucrativeness of the market, the suitability of the product or service and profitable financial considerations are the main criteria for VC investments.

2.2.2 Critical research on VC investment criteria and decision processes

Next, we turn to critical research on the investment criteria. There is a wide array of studies, which question the validity of traditional survey and interview studies on VC investment criteria. (see e.g. Hall & Hofer 1993; Zacharakis & Meyer 1995; Muzyka et al. 1996; Shepherd & Zacharakis 1997; Zacharakis & Meyer 1998; Cope et al. 2004; Zacharakis & Shepherd 2005; Franke et al. 2006; Chan & Park 2015; Sharma & Sharma 2015). According to for example Cope et al. (2004) the venture capital decision making process is unscientific. Also, it seems previous studies do not even depict these unscientific processes accurately, since VCs are not very well aware of their own decision-making (Zacharakis & Meyer 1998).

There exists grounded criticism towards *ex-post* interview and survey studies about VC investment criteria. *Ex-post* interview and survey research is prone to biases, such as the rationalisation bias and recall bias, ie. the effects of imperfect memory. (Zacharakis & Meyer 1998; Sharma & Sharma 2015) There are several biases and misuse of heuristics in the VC process, and VCs are not aware of their own decision-making processes (Sharma & Sharma, 2015). VCs rationalise their intuitive or irrational decisions later on

or recall decision situations only partially or even incorrectly. Biases include risk perception, overconfidence, inconsistency, habit and framing. (Dimov et al. 2007). VCs are also prone to the “alternative vs attribute-based approach” heuristic, since they receive concrete proposals, which easily get compared to each other at any given moment, whereas a more objective method might be attribute analysis, not comparing (Sharma & Sharma 2015).

The biases and heuristics have significant implications. For example Zacharakis and Meyer make far-reaching conclusions about VC decision-making criteria (Zacharakis & Meyer 1998) by claiming that information affects the criteria used, i.e. VCs shift their attention. More information seems to shift the importance from the entrepreneur to the market. This suggests that the entrepreneur is important when the VC does not have much information about the market, and if the VC is confident in the market, the entrepreneur is not that important. In short, the information available to the VC affects the criteria used due to a cognitive bias. If hold true, this claim has significant implications to both VCs and entrepreneurs about what information to seek and what to present in the VC process. This finding would also probably explain some of the differences in findings about VC criteria in different studies, present earlier in chapter 2.2.1 (see e.g Hall and Hofer 1993; Zacharakis and Meyer 1995; Sharma & Sharma 2015).

In support for Zacharakis and Meyer (1998), Martel (2006) finds that results about VC investment-decision criteria differs significantly when *ex-ante* data is used instead of of *ex-post*, an suggests that “Management” and “Financials” are the most important criteria used by VCs in making investment decisions. When reflected upon the study of Zacharakis and Meyer (1998), the criteria offered by Martel (2006) can be seen somewhat more credible than previous *ex-post* studies – although the criteria do not contradict, simply show a different prioritisation.

Moreover, it seems to be that an important decision-making heuristic does not show properly in previous studies, and that is “instinct” or “intuition”. This is probably difficult or embarrassing for VCs to admit – denial is sort a rationalisation bias – and difficult or inconvenient for researchers to report. There are some references to it in studies (Hisrich & Jankowicz 1990; Beim & Levesque, 2004; Cope et al. 2004), and Hisrich and Jankowicz even try to model it. A long-time practitioner, Richard Thompson, puts the art of venture capital this way:

"One of my theories is that the assessment of financials is 75 % analysis, based on fact, and 25 % instinct; that of people is 50 % analysis and 50 % instinct and that of markets and strategies is 25 % analysis and 75 % instinct. For these reasons, instinct or intuition, which is often deductive logic, is vital in assessing a company, particularly an early-stage one, and is often underestimated in importance." (Thompson 2008, 16)

Biases and heuristics are typical for human behaviour, and not a surprise in a complex VC decision making process. Woike, Hoffrage & Petty (2015) conclude, that in an uncertain decision-making environment, i.e. where lots of the relevant information is unknown, simple strategies tend to out-perform complex ones. The value of complex assessment models increases with the amount of data available, but with regard to start-ups in differing environments (e.g markets), there rarely is comprehensive, accurate data on almost anything. (Woike et al. 2015).

The amount of biases affecting VC decision making seems to be fairly large. Chan and Park (2015) even find that coloring and pictures in the business plan affects screening decisions of VCs – hardly a matter which would in reality affect or predict venture success. Shepherd et al. (2003) present interesting findings, that more experience is always not better for a fund manager. At first, experience helps the decision maker for example to focus attention on key factors and to ignore extraneous variables, and thus may lead to better investment decisions. However, experience can also cause the decision-maker become overconfident or rely too much on heuristics. VCs might benefit from trying to intercept harmful decision processes with experienced decision-makers for example by requiring them to make decisions in unfamiliar situations, present their suggestions to other managers or encourage them to counter-factual thinking. (Shepherd et al. 2003)

Franke et al. (2006) find that VCs also show some similarity bias in their decision making, i.e. VCs tend to have a higher probability of funding teams with a similar background with the VC. In more detail, VCs with prior experience of working in either small or large firms tend to prefer individuals coming from the same background and VCs who have an engineering or managerial education tend to rate teams with both higher than teams without. These findings have implications for the entrepreneur: either include similar backgrounds to the team or seek funding from a VC, whose managers' have similar backgrounds as your team.

There is also criticism on whether VC use the right criteria at all, even though they would be reported accurately. For example, Cassar (2014) finds that the entrepreneur's industry and startup experience does not necessarily lead to learning and thus higher performance, if certain conditions are not met. This kind of research calls for studies on what really predicts startup success rather than which criteria do VCs use to predict startup success.

To conclude, VCs are heterogenous in making decisions, they do not necessarily know their own decision-making processes very well, they have several biases and that the criteria they use in making investment decisions do not entirely correlate with venture success, i.e. the criteria are not correct. Nonetheless, though research is far from conclusive, research seems to strongly suggest that the competitiveness of entrepreneur and the team, the lucrativeness of the market, the suitability of the product or service and profitable financial considerations are the main criteria for VC investments, as discussed in chapter

2.2.1. (Šimić 2015, Sharma & Sharma 2015; Martel 2006, Kaplan & Stromberg 2004, Boocock & Woods 1997, Muzyka et al. 1996, Fried & Hisrich 1994, Rah et al. 1994, Hall & Hofer 1993, Roure & Keeley 1990, Hisrich & Jankowicz 1990, Robinson 1987, MacMillan et al. 1987, MacMillan et al. 1985, Tyebjee & Bruno 1984) Although many previous studies might have problems due to the limits of the interview or survey methods, the most important VC criteria to invest seem to be related firstly to the team and secondly to the market, with other criteria holding less importance, although they are not irrelevant. Focus on the team and the market make sense intuitively, since a large and lucrative market is needed for a large enough success, but no success is possible without a team able to exploit the possibilities offered by the market.

3 FINNISH GAME INDUSTRY AND VENTURE CAPITAL

3.1 Game industry dynamics

This chapter introduces the entertainment software industry, its actors and dynamics to provide the other half of the context of this thesis, the previous half venture capital having been introduced in the previous chapter.

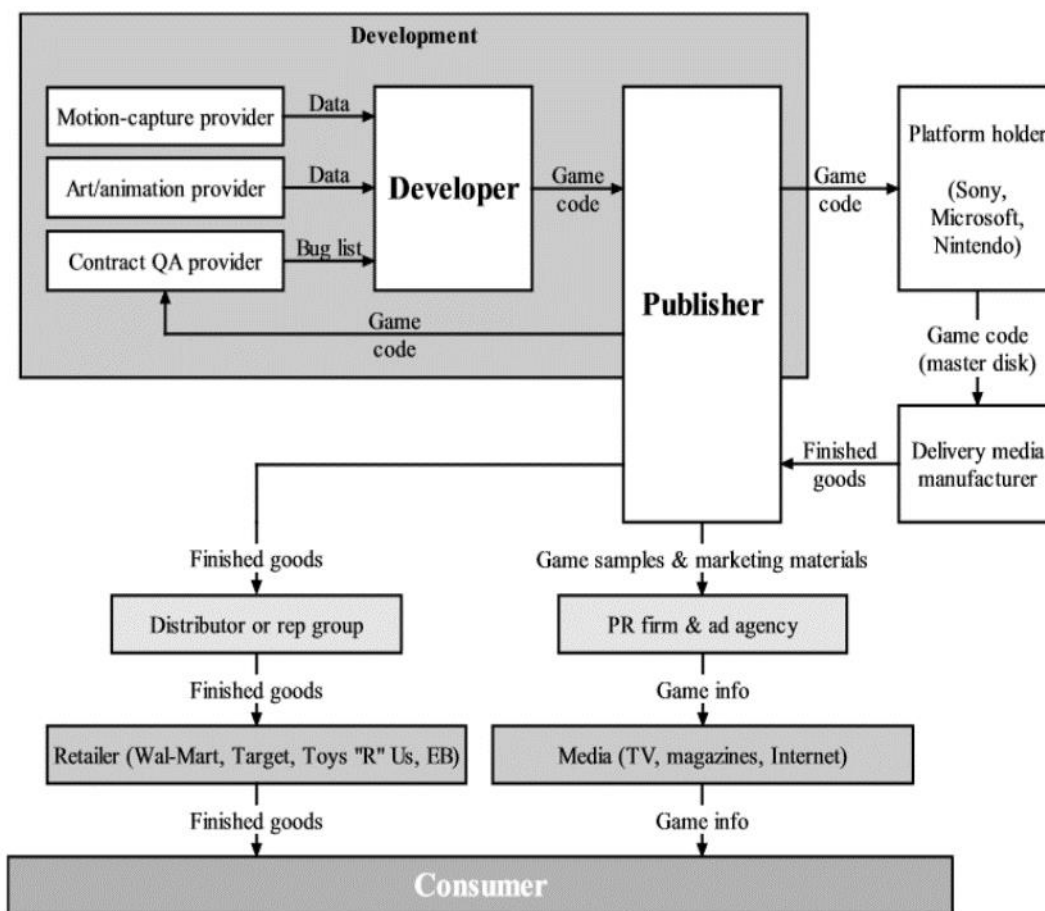
The game industry has significant economic and technological importance (Broekhuizen 2013). Growth in the game industry has been fast. For example, in the period 2005-2009 the computer and video games industry grew 10,6 % on average annually in the USA. During the same period annual average GDP growth in the US was 1,4 % in 2005-2009. (ESA 2011, 2) In the US alone, the total consumer spending only on gaming was \$25,1 billion (app. €19,1 billion) in 2010 (ESA 2011, 11). In 2017, the GDP impact (value added) of the whole US industry was \$11,7 billion (ESA 2017). The market is of course not uniform, and there are several more or less defined segments, depending on for example game genre or platform.

The fact that the industry is significant or lucrative in general does not mean that all the firms in the sector would be profitable and add investor value. Many of them do not, but are commercial failures. Many, if not most game developers can be described as 'new economy firms', characterised by operational flexibility, limited formality and leadership driven by the future-oriented and encouraging vision of their central actors. (Lukka & Granlund 2003). Such firms are risky, since they rely to a large extent on only a few central people and one or few products. In rapidly evolving, highly competitive sectors such as the game industry, volatility can be enormous.

The boom of the game industry is due to cultural changes – playing is more mainstream than it used to be – as well as technological change. The emergence of smart phones has resulted in a powerful enough device in everyone's pocket and high-speed wireless data transfer has made the distribution of games easy. Smart phones are common and relatively cheap in both developed and developing countries, making the potential market massive. Industry growth is probable far to the future, since younger generations play more than older ones. (Kuorikoski 2014; Lappalainen 2015; ESA 2017)

Game dynamics have changed significantly during the past decade. In the first decades of its existence, from the dawn of gaming in the mid-20th century until the first years of the 21st century the dynamics of the game industry were rather traditional: games were normal physical goods, bought from retailers in the same way as for example videos. A game project began with a publisher commissioning a game to a developer or the developer pitching its idea to a publisher. After this an agreement on the terms was reached, with publisher usually dominating the negotiations. Most developers still got a royalty of

sold units. The publisher then produced the physical copies and made distribution deals with various distributors, who in turn distributed the copies to retailers. The retailers sold the games to consumers, who had to buy their own physical copy of the game (excluding piracy). Of course, in reality the dynamics were a lot more complex, with various different suppliers and actors in most of the phases of the process, for example platform owners and game media playing an important part. Figure 8 illustrates these traditional dynamics. It is noteworthy that during these dynamics the developer received a fairly small amount of the total value of the product while publishers, distributors and retailers all had more market power and thus captured a larger share of the sales price. (see e.g. Rabin 2010, Tekes 2013).



Position of each entity in the product path for a console game.

Figure 8 Traditional game development revenue model (Rabin 2010)

As seen from Figure 8, the publisher was in control of the value chain, and led the different actors, ordering the actual game code from the developer, getting it manufactured, marketing it and providing it to distributors, who in turn sold the physical game copies through different retailers. The publisher also often provides funding for the developer in the form of upfront payments for a project. The publisher also monitors the

development of the game and influences the content of the game based on estimated market demand. Needless to say, publishers amass vast amounts of data and knowledge about the industry and use it to support developers. In the framework of these traditional dynamics, the method of investing into the interactive entertainment industry was to invest in companies in a normal manner, that is buy stock of for example Nintendo or Electronic Arts. Much of the industry still operates this way. For example, mainstream console games found in normal retailers operate under such dynamics. Even with new digital distributors such as Steam the mechanics are rather similar. Steam has just replaced traditional stores with a digital store.

However, digital distribution has dramatically altered the value chains of the entertainment industry. Digitalisation, the Internet and the development of cell phones into "pocket computers" have transformed the industry dynamics in a profound way, opening up possibilities for new business models and thus also different investment models. Note that this does not apply only to games, but also to books, music, series and movies. Whereas in the traditional model - and in large productions, still - the publisher was central actor, digital distribution has given the developer more control to the value chain.

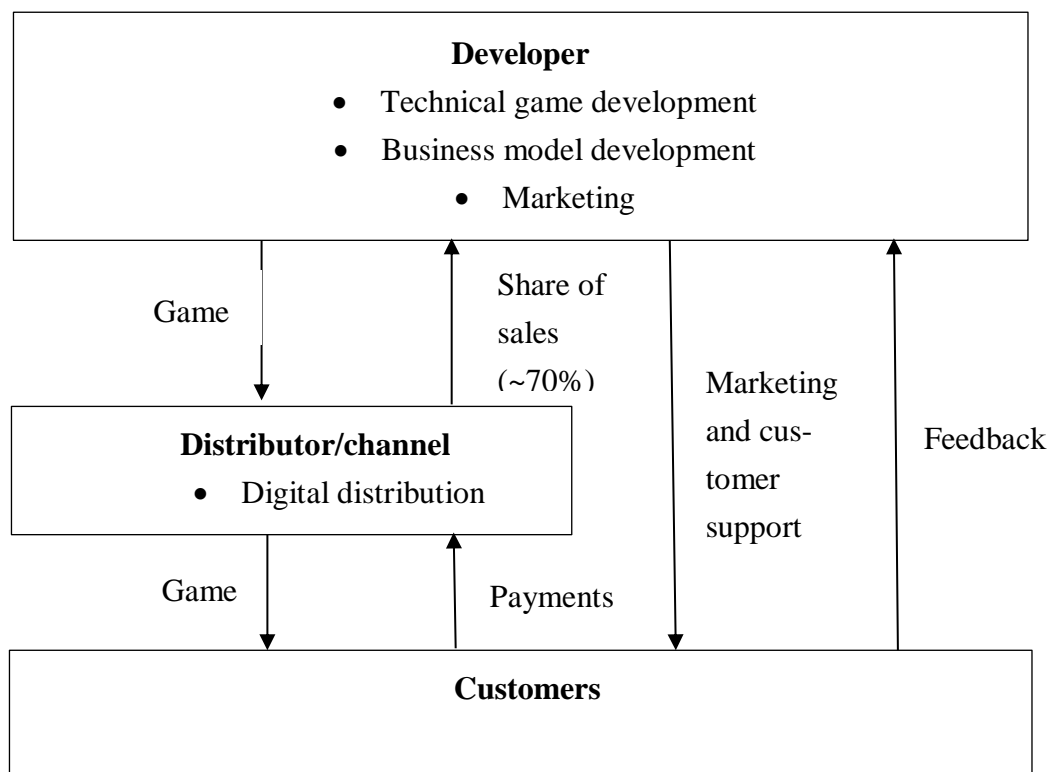
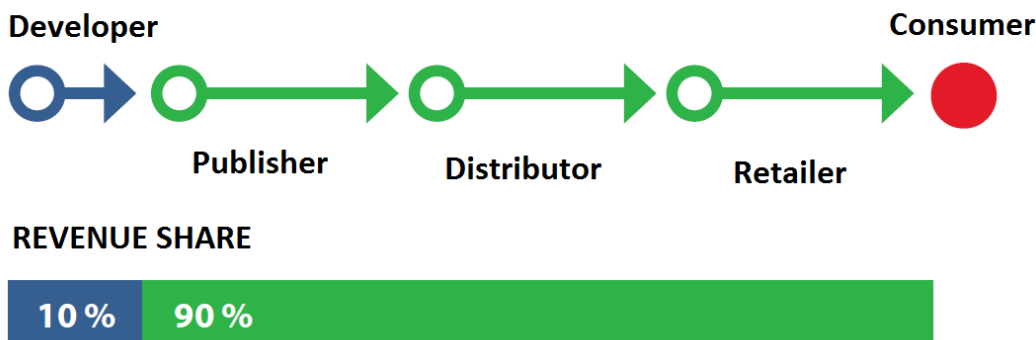


Figure 9 Digital game industry dynamics (own illustration according to Tekes 2013, Kuorikoski 2014 and Lappalainen 2015)

As Figure 9 Digital game industry dynamics (own illustration according to Tekes 2013, Kuorikoski 2014 and Lappalainen 2015) Figure 9 shows, in the digital distribution model the developer makes and markets the game and sells it through a digital distributor, i.e. channel such as Appstore (for Apples devices), Google Play (for Android devices) or Steam (for PC). The developer and the channel both receive a share of the revenue, the developer receiving a larger one, perhaps 70 %, though varying depending on the distributor. The distribution channel is fairly passive, usually only conducting basic quality control, but of course the channel has a large impact even with small actions, such as picking a game for special exhibition in the webshop. Naturally, getting raised to the frontpage of AppStore can make a hit. (Tekes 2013, 19-21; Lappalainen 2015). Some developers even sell directly from their webpage, bypassing even the digital distributors. The impact of digital distribution on revenue share earned by the developer is illustrated in Figure 10 below in Figure 10. Note that the exact revenue shares vary by channel, and the percentages 10 % and 70 % are rough approximations.

Traditional distribution model



Digital distribution -model

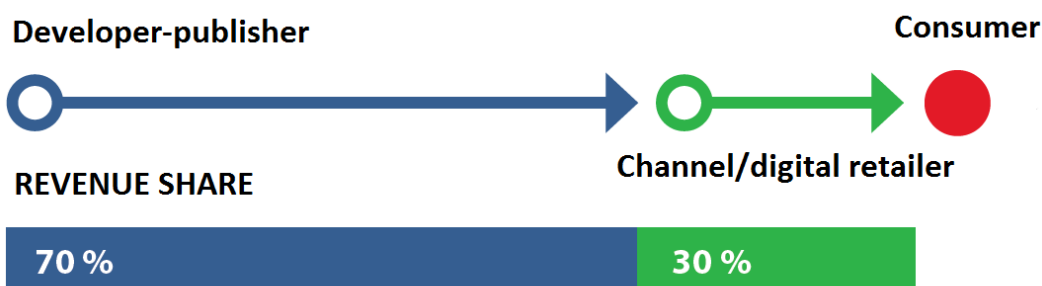


Figure 10 Revenue share difference in the traditional distribution model and the digital distribution model according to Tekes (2013)

As seen from Figure 10, the digital distribution model has streamlined the value chain by cutting publishers and physical distributors and retailers out of it. Thus the developer takes care of the functions of the publisher and receives a far greater share of the total value. It must be noted that this depiction of the model is a simplification, and in reality, many different actors interact in a network, not in a linear process. Many publishers still order games from a subcontractor-developer in the traditional manner and publish them digitally.

Nonetheless, digital distribution has had a profound strategic impact on the industry. In the traditional model the developers were more like subcontractors. With digital distribution, developers can control most of the value chain and instead use subcontractors for marketing, PR and so forth. Controlling the value chain also makes it more lucrative for the developer to invest in long-term IPs (intellectual property), since they now retain them, whereas the IPR was usually transferred to the publisher in the traditional model. The publisher then used successful IPRs for several products, sometimes developed by different developers. In addition, digital distribution has lowered the overhead costs of an entertainment software project, thus making market entry easier for smaller developers and productions. (Tekes 2013, 22). This has led to a massive increase in game supply. In theory, anyone with programming skills can develop and publish a game – and indeed the digital distribution channels are full of games developed by one or two people, many of which reach considerable success. Most top-grossing games are nonetheless usually large productions. With the increase of supply, prices have sunk. Nowadays, a mobile game that costs 10 dollars is comparatively expensive (Kuorikoski 2014, 250), and should be of premium quality.

This decrease in price has led to perhaps the most significant result of the digital distribution model: the development of new revenue models, such as the "free-to-play" (F2P)⁸. In F2P, the game can be played for free, but the experience can be enhanced with paid content. (Wu et al. 2013) According to Koopee Hiltunen, the director of the Finnish Game Association Neogames, as much as 96 % of mobile game revenues come from F2P-games (interview 14.11.2017). For example, the tremendous success of Supercell is based on mastering this revenue model. In the traditional distribution model, the developer was mostly paid for developing a good game - that is a game the publisher ordered and paid for. In the digital distribution model, the developer is paid only in proportion to the revenue the game creates. This has let out the creativity of the developers to invent business models instead of games that are nice to play. Many games are still paid once, but there is also a wide variety of types monetisation: in some games the player can pay for extra

⁸ For an overview of digital merchandise and an analysis on network effects and their monetisation optimisation, see Wu et al. 2013.

content, for examples levels, and in some games the player can pay for speeding up progress - a creative way of earning by exploiting human impatience. Many games are completely free for the player, and get revenue from advertising (Tekes 2013, 22)

Digital distribution, along with the fact that almost all devices are connected to the Internet, has also made the game industry a data-driven industry (Seif El-Nasr et al. 2013). In almost no other industry can so many different metrics be tracked about the users and how they play the game. Collecting, manipulating, analysing and utilising data has become a central part of game development.⁹

Games are a hit-driven industry, much like the music and movie industries. A minority of the games are profitable. (Kuorikoski 2014, 248; Hiltunen, interview 14.11.2017) According to Jaakko Kemppainen, a long time game industry practitioner, *“80-90 % are not profitable but the rest make so much profit that the industry remains profitable”* (Kuorikoski 2014, 248). This hit-driven nature increases volatility. Koopee Hiltunen compares traditional industries and the game industry by saying that in the game industry, a small company can produce a big hit, whereas for example in the paper industry one need's a large mill for large output. According to Hiltunen, growth is not limitless, but the limits are far. The market only needs so many hits at any given time, so most of the games do not reach commercial success.

Since most games are free, critical minds could argue that there is a bubble in the game industry: free games are funded by advertising more free games. So far also the real revenues of the industry have grown, along with consumer interest, but it remains to be seen whether the F2P model is sustainable for the industry in the long term.

For the investor, digital distribution has created a completely new domain. Since the developers can and try to control the value chain more comprehensively, they also require finance for all the functions previously taken care by the publisher. Venture capitalists or business angels are often the provider of this capital. In addition, in many ways, in the traditional game industry value chain, the publisher performed the functions that VCs perform in the digital game industry: provide funding, assistance and networks and monitor the developers with contracts.

From the point of view of investors, but also for all actors in the industry, from developers to individual employees, the game industry is characterised by rapid, multi-layered change and volatility. Firstly, information technology progresses steadily and rapidly compared to many other industries. This includes software and hardware, and as the digital distribution development has shown, change can have profound business implications. Secondly, customer preferences change in unpredictable and relatively fast. Thirdly, game contents develop fast. This includes graphics, game design and so on. All

⁹ For a detailed overview on game metrics and analytics, see Seif El-Nasr et al. 2013.

this makes development difficult to predict, not to mention control (Kuorikoski 2014, 249)

Moreover, a significant issue that must be taken into account is the blurring of a product and an investment in the game industry. In the game industry, value is created solely by the developer's human capital – the technical, design and artistic skills of the individual employees. Skills are transformed into the actual content of the software, such as design, art and characters, the technical features of the software, such as the source code and possible separate game engines, the brand of the game created by marketing efforts. All of the above can be summarised as the cash flow potential of the product. Creating value is not enough, but one also needs to capture it to reap the benefits from it. Value in game projects can be captured into either equity of the company or the tradable intellectual property rights (IPR) created in the game project.

Importantly, in addition to direct value created in the making of a game, value is created when the employees learn and the organisation develops in the process of creating new games. Also, vital networks between for example partners and distributors emerge. Most developers work on one or at most a couple of different games at a time. Every project is a strategic decision on what to focus on, how to differentiate. All of the products of the game industry are of course unique - there is no sense in producing the same game twice. Moreover, the projects last a long time, even years. Thus, the significance of the project to the firm is substantial - in many cases, a matter of existence. In such crucial projects, the companies surely must take into account future considerations, such as the company brand and the expertise of the employees - in general, real options for future game projects. This blurring of the product-investment line increases agency problems, since the developer team might be taking into account for example the development of personal skills and networks, whereas the VCs equity is tied to the specific company. The VC risks losing all of the money, while the team stands to win at least experience and networks – and a better chance with the next company. VCs need to take these considerations into account.

To conclude, the game industry has undergone a major shift in industry dynamics. Digital distribution has empowered developers and turned them also into publishers. Digital distribution has also lowered barriers to entry, which has vastly increased the supply of games, which has lowered the price of most games to completely free. This has given rise to a new business model, the free-to-play (F2P) -model. Games have always been a hit-driven industry, but the huge increase in supply has made it even more so. The constant change in technology, user preferences and game contents make the game industry a rapidly changing and unpredictable industry. This constant change, in addition to the intense competition and hit-driven nature make the game industry very volatile.

3.2 Game industry in Finland

This chapter introduces the Finnish game industry. From 1984 to 2013 Finnish developers have made over 600 games. Important factors in the rise of the Finnish game industry include a strong hobby community and game culture since the 1980s and Nokia, which strengthened especially mobile expertise in Finland. The rich educational possibilities also play an important role.

The huge success of Rovio, Supercell and other mobile game developers has been due to the evolution of digital distribution channels, mainly Google Play and Apple's Appstore. Nowhere have mobile games been developed for more than a decade. Nowadays there are approximately 250 active game development companies in Finland. (Tekes 2013; Kuorikoski 2014, 245; Lappalainen 2015).

In a survey by Neogames (N=140), most developers focus on the mobile gaming market, with 76 % naming iOS as their favorite platform, followed by Android with 69 %, PC & PC online far behind with 46 % and other platforms even further behind: Playstation and Xbox both with 10 % and "other" with 9 %. Interestingly, already 9 % and 7% of developers name virtual reality and augmented reality as their favorite platform, respectively. Windows Mobile, Nintendo and Facebook receive on 6 %, 4 % and 2 % respectively. (Neogames 2017)

The Finnish game industry developed over the years into its present state (Tekes 2013). Development has been similar internationally especially during the past few years, with the introduction of digital distribution, which is inherently international. Products in Google Play, AppStore and Steam can be accessed from anywhere in the world, with any suitable device.

Industry growth in Finland has been rapid. The beginnings were humblem and only late 1990s saw commercial success. The rise to prominence only began during the mid-2000s. (Tekes 2013) Since, the Finnish games industry has grown in turnover from 40 million euros in 2004 to 105 million in 2010 and to a staggering €2,5 billion euros in 2016 (only game development) (Neogames 2011; Neogames 2017). Finland can be described as a "game industry superpower", with a larger market share on the global market than suggested by our GDP: mobile games generated around 35 billion euros in turnover globally, of which Finnish mobile game developers generated about 7 %. The incremental value to the Finnish GDP was roughly 0,5 % in 2016, a significant share for a single industry. (Neogames 2017) For example, the share of the whole mining industry to Finnish GDP in 2016 was 0,4 % (Tilastokeskus 2017). Figure 11 shows the total revenue of the industry between 2008-2015 and Figure 12 the number employees between 2008-2016, which illustrate the rapid growth of the Finnish game industry.

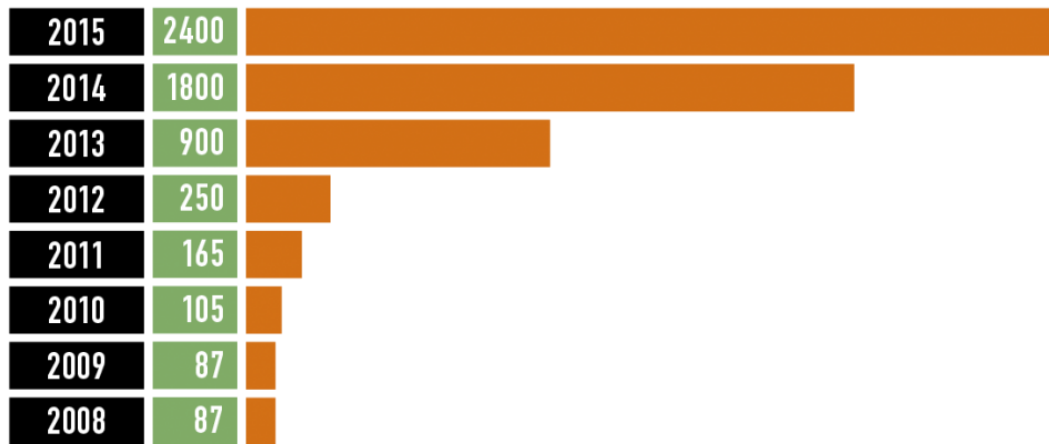


Figure 11 Total revenue of Finnish game industry 2008-2015 (only development) (Neogames 2017)

As seen from Figure 11, turnover increase has been accelerating. In 2008, total turnover was only 87€ million, in 2012 already 250€ million and after that exploded to 2,4€ billion in 2015. This explosion is explained by the emergence of two Finnish game industry “super stars”, Rovio and Supercell, which caused the massive increase in total revenue after 2012. Supercell produced 2,1€ billion in revenue in 2016 alone. This reflects the hit-driven nature of the game industry. In 2016, total industry revenue growth has continued, total revenue being 2,5€ billion, but the growth pace has decelerated considerably. Finnish game developers are rather small companies, with only 30 developers reaching an annual turnover of over 1€ million, a total of 12 % of the developers. The median turnover of Finnish game developers is only 95 000 € in 2016 due to the large number of startups in the industry. (Neogames 2017) This might suggest that there is demand for growth capital in the future.

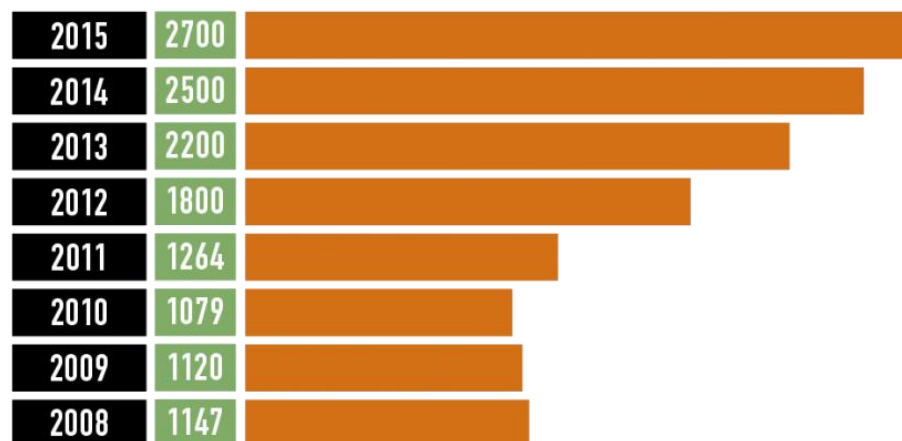


Figure 12 Number of employees of the Finnish game industry 2008-2015 (Neogames 2017)

As seen from Figure 12, growth in the number of employees has been steadier than total revenues, but significant. In 2016, the number of employees had further risen to 2750, also signalling a decelerating growth (Neogames 2017). This might be due to leveling of demand or growth prospects but most probably it is more due to a lack of suitable, skilled employees.

Geographically the Finnish game industry is clustered most clearly to the capital or Helsinki region, with 42 % out of 250 developers being situated there, 18 % being in Central Finland, 18 % in Northern Finland, 13 % in Western Finland and 9 % in Eastern Finland. Approximately 75 % of all employees work in the capital/Helsinki area companies, and 98 % of the total revenue is from this region. Regional game industry hubs include Oulu, Tampere, Turku, Kotka, Kajaani, Joensuu, Jyväskylä and Rovaniemi. (Neogames 2017)

The Finnish Game Industry Association Neogames has comprised an analysis on future challenges in the Finnish game industry. These include, in this order, finding senior employees, competition and saturation of the market, economic challenges of the monetization models, unpredictability of the industry and managing growth. Also Kuorikoski (2014) mentions that risks, volatility and unpredictability are key challenges to the Finnish game industry. At the moment the trend is small mobile games, where Finnish developers are strong, but this could change quickly. The main markets are in the US and Japan, and the employee pool of creative designers in Finland is limited. (Kuorikoski 2014, 245-250).

In conclusion, relative to its size, the Finnish game industry seems to have a strong position in the global mobile game market. The industry is competitive and still growing, and the high education level of Finland supports future development. The tremendous success of Supercell and Rovio have inspired all of the actors in the field and brought credibility to the industry. The industry has national significance, which helps in strengthening public support structures. The general risks present in the industry, i.e. volatility, unpredictability and rapid change are challenges to the Finnish game industry, but these challenges affect the whole global market. They are also possibilities. Changes in technology make it possible for new developers to break through, if they are early adopters of that technology, for example virtual reality or augmented reality. A special challenge to growth in Finland seems to be the lack skilled senior employees, since the population base is small compared to the size of the industry.

3.3 Venture capital investing in the game industry

This chapter discusses venture capital early stage investing criteria special characteristics in the game industry, and in Finland, based on previous literature presented in the previous chapters. In chapter 2.2, we concluded that though research is far from conclusive, previous literature seems to strongly suggest that the competitiveness of entrepreneur and the team, the lucrativeness of the market, the suitability of the product or service and profitable financial considerations are the main criteria for VC investments. The most important VC criteria to invest seem to be related firstly to the team and secondly to the market, with other criteria holding less importance, although they are not irrelevant. Focus on the team and the market make sense intuitively, since a large and lucrative market is needed for a large enough success, but no success is possible without a team able to exploit the possibilities offered by the market.

The special characteristics of the game industry from the point-of-view of the VC can be approached in at least two ways: by analysing the effects the game industry has on the VC criteria themselves and by analysing the effects of the game industry in the decision-making process of the VC. For example, as mentioned earlier in this thesis, Zacharakis and Meyer (1998) point out that the information available for the VC affects the criteria used in decision-making. They suggest that more information shifts focus from the entrepreneur to the market.

In the game industry, especially with mobile games, the market is very well known from one point-of-view and not known at all from another. On the one hand, the distribution channels, monetisation models and for example devices are rather uniform and the dynamics are well known. There is also lots of data on what games have sold well and so forth. On the other hand, it is impossible to know beforehand which game will be popular, and how much people will for example pay for digital products. Much like in art, the “beauty lies in the eye of the beholder”, and thus someone else cannot completely know whether others will like the game enough. Intuitively one might think, that if the market is well known, the focus would be on the variable, i.e. the entrepreneurial team? Following on Zacharakis and Meyer (1998), the unavailability of new information about the market would also lead to a focus on the team. Most likely, also in the game industry, the team is of high importance to the VC in making an investment decision, just like in other industries, but probably even more so.

As mentioned, in general the market potential is an important criterium for VCs. The VC needs to know that there is a market demand or at least a feasible possibility of market demand for the venture’s products. In the game industry, the market is known to be large and a continued demand for games in general is guaranteed. Different market segments on the other hand have different potential and different challenges. It is plausible to assume that for the VC, it is important to know that the market potential for the type of

games the venture is about to develop has a large enough potential to become a tremendous success. Niche game genres probably cannot produce enough revenue for a developer to be lucrative enough for the VC.

Game products are highly diversified, and every game is unique. The quality of the game can be measured in technical terms, but also in artistic or design-related terms. Sometimes a technically simple game can be commercially very successful. Previous literature is not detailed enough to assess whether VCs will try to evaluate the game or games of the venture. The results in this aspect of this study are particularly interesting.

Financials all in all are not amongst the most relevant VC investment decision criteria, according to previous research. This is understandable, since any early stage company has almost no previous data on financial performance and predictions include estimates. However, in some industries, financial projections can have more significance. For example an industrial venture certainly needs to have detailed calculations on production costs, prices and so forth. The game industry is characterised by volatility, unpredictability and intangibility, so it is plausible to assume that financial calculations are not important in VC investment decision making – after all, they would only be educated guesses.

As the game industry is volatile and unpredictable, it could actually be assumed that reducing the unpredictability and risks would be of value to investors, even VCs. Thus for example real options might arise as possible remedies for the problem. Real options refer to the value of possibilities to alter one's decision in the future (Keegan 2008, 127). For example, a VC can assign some value to the fact that investing in the seed phase might grant them a possibility to invest in later stages, when there is more information about the venture and the market. The value of real options increases with volatility – high with new ventures in general, and especially in the game industry. Smith and Smith go so far as to summarise that "*--a new venture can be viewed most accurately as portfolio of real options--*" (2000, 11). In addition to real options, non-conventional tools of analysis might be useful in VC decision-making in the game industry. For example, Miloud et al. (2012) introduce a valuation tool based on inputs such as market data, networks and team experience instead of outputs, i.e. cash-flow, of the new venture.

In the game industry, where value is created by solely intangible assets, it can be assumed that VCs would pay special attention in retaining the value. As explained in chapter 3.1, agency problems can arise due to the difficult capturing of value in a game project – much of value is automatically captured by the employees in the form of new skills and networks. It is possible that VCs operating in the game industry try to mitigate these agency problems somehow, but previous research is not detailed enough to answer how.

4 EMPIRICAL STUDY

4.1 Research approach

This chapter describes the research approach of the thesis. Ryan et al. (2002) define that *research is a process of intellectual discovery, which has the potential to transform our knowledge and understanding of the world around us.* (Ryan et al. 2002, 7) The approach of the thesis is descriptive and empirical, observation based (Ryan et al. 2002, 11-12).

Moreover, the research approach is qualitative. The premise for qualitative research is the description of the real world and a holistic review of the subject. (Hirsjärvi, Remes & Sajavaara 2004, 152; Saaranen-Kauppinen et al. 2009, 5-7) Where quantitative research tries to establish statistically verified explanations and causal relations, the aim of qualitative research is to understand each research subject in a holistic manner, through versatile description and analysis. (Eriksson & Kovalainen 2008, 4-5). The qualitative approach allows the subject be analysed in more depth, in more subjective terms. Since fundamentally this thesis is about human decisions, the qualitative method can offer insights a quantitative method could not have yielded. Qualitative research is more adapted to answering the question of why rather than just what.

Characteristic for qualitative studies, the thesis does not have a clearly defined, statistically testable hypothesis – nor does it need one, in the opinion of the researcher. Actually, during the research process, the researcher tried to keep an open mind and not formulate even too detailed mental expectations on the results, as not to affect the results. Previous research suggested certain criteria, but the research was conducted not presupposing any investment criteria.

In qualitative research, the sample is usually deliberately limited, and is not based on random sampling. In the analysis, inductive – that is data-driven, compared to theory-driven – inference is emphasised, since the purpose of the study is not to test a theory or a hypothesis. (Hirsjärvi, Remes & Sajavaara 2004, 155) The analysis of the data is an essential part of the research process, since it creates a basis for the evaluation of the research and drawing conclusions. (Hirsjärvi, Remes & Sajavaara 2004, 213–214)

The thesis falls into the tradition of *'managerial-oriented venture capital research'*, which approaches VC activities from the micro-perspective in contrast to *'market-oriented venture capital research'*, which has a macro-perspective (Landström 2007, 17). The larger framework is nonetheless finance.

In the Finnish accounting and finance research tradition this kind of approach can be classified as action-oriented¹⁰. The aim of the approach is a thorough understanding of a

¹⁰ Toiminta-analyttinen tutkimusote in Finnish

phenomenon. Since the action-oriented approach is used to study social - and thus inherently subjective - phenomena, the methods of the approach are not fixed or even clearly defined, compared to for example nomothetic research. Every phenomenon requires a specifically designed method of study. The empirical part usually consist of a study of just few subjects and the methods are versatile and even unconventional. In action-oriented research it is accepted that the generalisability and objectivity of the research are limited. (Neilimo & Näsi 1980) However, given the context, some theoretical generalisability can be achieved (Lukka & Kasanen 1995).

The empirical method of the thesis is the interview, with multiple interviewees from different organisations. Thus the study is not a case-study (Scapens 1990). Interviews are perhaps the most common method of social inquiry. (Holstein & Gubrium 2002, 112) Interviewing provides a way of generating empirical data about the social world by asking people about a phenomenon. (Holstein & Gubrium 2002, 112) The interview method differs from a survey in that there are no ready answer options given. Interviews are a feasible method to gain a thorough understanding. A large survey might give more generalisable results, but the answers of a survey are not as deep and reflective as those of an interview. There might also be practical challenges in getting a large enough answer rate for a survey. (Saaranen-Kauppinen et al. 2009)

The underlying research philosophy is positivist. The positivist approach to interview research assumes that facts can be acquired through interviews. This is why information questions are included. A contrast to positivist research approach could be for example the emotionalist approach, interested in subjective experiences or the constructionist approach interested in meanings created through interactions. (Eriksson & Kovalainen 2008)

A traditionalistic view is that interview is a process of transmitting information. In reality, the process is much more complex. In an interview, both parties are active. The interviewer's perception always affects the results. Meaning is actively communicated, and interviews can also create new knowledge instead of just transferring it. Thus, the interview conversation can be a source of bias, error, misunderstanding or misdirection. These can be controlled by controlling the questions. (Holstein & Gubrium 2002, 112-113)

Conducting a good interview is more complex than initially seems. According to Eriksson & Kovalainen (2008), novice researchers often confuse their research questions with interview questions, which are and cannot be the same. Interviews only provide material for answering the research questions, after careful analysis. (Eriksson & Kovalainen 2008) A research interview differs from a normal, everyday discussion or informal interview in such a manner that it is planned, initiated and controlled by the interviewer and that it serves the answering of the research questions. (Saaranen-Kauppinen et al. 2009)

4.2 Description of interviews

This chapter describes the method in detail and the interviewees. The data of this thesis contains six interviews: five from venture capitalists and one from the Finnish Game Industry Association, Neogames. The researcher evaluates that this is enough to answer the research questions of the thesis. Moreover, a practical reason is that there is a limited number of accessible VCs which have made game company investments. One method of measuring whether there is enough data is saturation. This means that when same results start to occur frequently and results start to repeat themselves, it is possible to deduce that the data set is saturated and additional data, in this case interviews, does not yield significant new information. Naturally, studying heterogeneity, differences, requires more data than studying homogeneity, similarities, in the sample. (Saaranen-Kauppinen et al. 2009, 50-51) For example, in this thesis the unifying criteria of VCs investing in the game industry were studied, instead of differences in VC game industry investment criteria.

In this thesis, the interviews followed a rather traditional process. First, the researcher approached the possible interviewees via email. The interviews were conducted in Finnish by telephone or face-to-face, recorded and transcribed. One interview was conducted in writing via email due to the interviewees schedule challenges. The questions along with a brief introduction were provided to the interviewees beforehand, several days before the interview so that the interviewees could familiarise themselves with the questions. The introduction and the questions can be found as an appendix of this thesis. The interviews were semi-structured, with also open-end questions. This means that the researcher had a list of aiding questions ready for all participants. This list possibly acted as a catalyst for deeper discussion. (Saaranen-Kauppinen et al. 2009) The interviews varied in length from approximately 30 minutes to over two hours. The interviews were translated when reported in the thesis. The researcher evaluates that since language is not the focus of the study, translation from Finnish to English did not affect the results in any meaningful manner.

Prior to the interviews, the participants are explained the benefits of the study, explained their right to abort the interview and disclose information from the thesis. All participants should give their informed consent to the study. The study does not contain deception. According to the researcher's best judgement, the thesis fulfills the requirements of ethical research. (Blumberg, Cooper & Schindler 2008, 156) All but one interviewee gave their consent on using their name in the thesis.

The main subjects for the interviews are managers of VC funds, who have first-hand experience on investment decisions on game companies. Thus, the interviewees described their own decision criteria, along with organisational criteria. The representative of the Finnish Game Industry Association, Neogames, was also interviewed for triangulation, a

verification of the investor's views on the industry and a more holistic understanding of the subject.

As the subjects for the interviews, researcher tried to identify experts in the field via Internet research. All of the interviewees have participated in an investment into a game company. Practical experience is interpreted as a sign of at least some sort of expertise in the field. In the case of the interviewed investors, it is assumed that as rational actors, the limited partners (LPs) - mainly large institutional investors - would not hand their wealth to funds they do not judge credible. The Finnish Game Industry Association Neogames was chosen because it is plausible to assume that an industry association accumulates expertise from behalf of its members and the industry in general.

The interviewees were asked five main questions. The first question was the main, direct question and the four later ones supporting questions designed to elaborate on the first one or bring about new perspectives. First, they were explicitly asked about which criteria they use in deciding on a game industry investment in the initial screening phase and the more thorough evaluation phase. Second, they were asked which criteria definitely eliminate an investment proposal. The third question was about specific characteristics for improving the possibilities of a positive investment decision. Fourth, the interviewees were asked which criteria are emphasised in evaluating especially game industry companies compared to other industries and why. The final question was an open ended question about investing in game developers in general.

The first interviewees were partners and founders Marko Tulonen and Tanu-Matti Tuominen from the investment funds Mediatonic and Visionplus. The funds are not traditional private equity investors, but instead invest directly to game projects and receive a share of the revenues created by the project. Nonetheless, the logic is similar to VC dynamics. Both funds have made several investments into game companies. Mediatonic has ceased active investing, but specialised solely to game projects and VisionPlus specialises in game, software and new media investments. Tanu-Matti Tuominen has several years of background in the new media and digital marketing industry and Marko Tulonen in traditional venture capital private equity investing. By the time of the interviews, Mediatonic and made seven investments into game companies (Tulonen, interview 24.1.2012; Tuominen, interview 23.1.2012)

The third interviewee was partner and co-founder Timo Tirkkonen from Inventure. Tirkkonen has an extensive experience from the telecom sector, VC activities and SME-coaching. Inventure was founded in 2005 and has made 3-4 game investments. (Tirkkonen, interview 3.11.2017)

The fourth interviewee was partner and co-founder Timo Ahopelto from Lifeline Ventures. Ahopelto has been a full-time venture capitalist since 2009. Before that he was a highly successful entrepreneur. Lifeline Ventures is an established VC in Finland and is known especially for being the first VC to have invested in Supercell in the company's

early stage. It was founded in 2009 and has made approximately 80 investments, of which about 20 exits. Several investments have been made to game companies. (Ahopelto, interview 13.11.2017)

The fifth interviewee was director Koopee Hiltunen from the Finnish Game Industry Association, Neogames. Is responsible for the overall management of Neogames. He has experience from the game industry since 2004 (over 12 years), meets a lot of investors and developers, has hosted many events and introduced many game industry actors to each other. Neogames also produces statistics, research and reports about and for the game industry. (Hiltunen, interview 14.11.2017)

The sixth interviewee is one of the founding partners of the VC firm Wave Ventures, who does not want his name to be published in the thesis. The interviewee is responsible for game industry investments at the VC and has approximately one year of experience from VC investing. Wave Ventures is the first student-run VC in the Nordics. It started in 2017 and has so far made five investments, of which one to a game company. (Partner from Wave Ventures, interview 15.11.2017)

Table 2 below summarises the interviewees. As seen from the table, the researcher managed to interview decision-makers from each organisation.

Table 2 Summary of interviewees

Organisation	Name	Role
Mediatonic/Visionplus	Marko Tulonen	Founding partner
Mediatonic/Visionplus	Tanu-Matti Tuominen	Founding partner
Inventure	Timo Tirkkonen	Founding partner
Lifeline Ventures	Timo Ahopelto	Founding partner
Neogames	Koopee Hiltunen	Director
Wave Ventures	Anonymous	Founding partner

4.3 Results and discussion

This chapter reports the results of the interviews and discusses them. The results are first reported by each interview and then summarised by criteria, along with discussion.

4.3.1 *Marko Tulonen (Visionplus)*

Marko Tulonen from Mediatonic and VisionPlus sees that there are lots of similarities between the game industry and the movie industry. In general he emphasises the importance of the whole intellectual property right (IPR) and its management and future development while investing into game companies. When investing, it is better to see

something concrete, *like a demo or video or something*, not just an idea. Ideas are not funded. Tulonen believes that if there has been “*success in past, it is more probable that there is success also in the future*”. Business know-how is also sought after, since many teams have creative talent, but not enough business skills or project management expertise. Some developers have not been very interested in business, but just making games. The team usually needs to have some experience, some “*breakthrough*”. For an investment, the team needs to be interesting, working on an interesting genre. Still, “copy-cats” do not always work, although the genre, platform and segment are important. Sometimes the fund even does some outside testing with the game prototype, for example target groups. The target segment is important, as is the ability to develop IPR.

According to Tulonen, positive feedback from for example the publisher and other people’s opinions can affect positively. A developer is more interesting, if as offers from several publishers or funders. The fund uses some game statistics to support the evaluation. The long-term cash flow, i.e. the continuity of the revenue and the revenue model in general are important. Tulonen sees that there is no “single launch of game but several, it is continuous publishing.” Games are on-going projects, not one-time products. For this reason Tulonen is interested in sequels and such.

Tulonen describes the volatility and uncertainty of the market. In games you can never be sure of demand, but of production cost you can be fairly sure. Chance and randomness play a large part in game success, and thus the portfolio needs to have enough investments. Tulonen compares the game industry to other industries mainly in terms of pace: since game life-spans quicker, investment periods are perhaps shorter.

4.3.2 Tanu-Matti Tuominen (Visionplus)

Tanu-Matti Tuominen from the same two funds, Mediatonic and Visionplus, states that they seek game companies that will have a big success. The segment and genre of the game are important, as well as the platform and the portability of the game to different platforms. This is related to assessing the market potential, since Tuominen sees the market more important than the game itself: a company can “*have a great product but no market for it.*” The game needs to be interesting, and this is sometimes tested with a focus group. Even sales forecasts can be used, purchased from outside consultants. IPR development and the continuation of the product are important.

The team is important, according to Tuominen. The team needs to be experienced, and preferably has failed in the past, so that they know *how to fail*. The team also needs to have credibility specifically for the project they are making. The risks of the investment are assessed, and Tuominen mentions risks related to the team: can the team perform, can they finish, can they ship. Also the demand risk, “*will the game be bought*”, is mentioned.

A playable demo raises the possibility of the investment, since it can be seen as a sign of reduced risks of a project. Tuominen emphasises risk-aversion, since the industry has enough inherent risks.

Tuominen makes interesting general remarks about the game industry. According to him, one year is already a long time in the industry. The environment is in constant change, the industry is hectic. Thus it is important to have a good portfolio: different genres, platforms and segments. All in all, Tuominen sees *“it is difficult to invest into game companies through the VC-model (equity), since they are not technology firms at all, they are rock bands. You cannot own a rock band.”* This remark further emphasises the team in the investment decision.

4.3.3 *Timo Tirkkonen (Inventure)*

According to Tirkkonen of Inventure, the VC investing criteria to game companies do not differ that much from other companies. Business plans have a smaller meaning than in other industries since the market and the distribution channel are uniform and *there are only two business models, the free-to-play and the premium*. This means that the market or business models do not need to be evaluated separately, they are already known. This leads to an overemphasis of evaluating teams. This really means teams, not individuals. A team is a holistic unit and experience is the most important characteristic. The team needs to have both technical and game business experience. This means more than one project or one year. Less experience is not sufficient. Moreover, previous success is desirable. Another important factor is networks: the team needs to know the people in the industry and understand the dynamics holistically. More implicitly, Tirkkonen also mentions similar views about strategy, *“same opinions about business plans.”* (Tirkkonen, interview 3.11.2017)

In general, according to Tirkkonen, deciding an investment into a game company is perhaps faster and more straightforward than other industries, since the market, distribution or business models do not need assessment. Usually there is no need for a prototype, since the game is not evaluated, but the team. In the game industry, it is very difficult to predict hits, much like in the music industry. Tirkkonen describes game industry as a *“percentages game”*, where very few games succeed, and it is hard to know who. The market is getting more difficult all of the time, since *“big players”* dominate about 80% of market and advertise a lot. To succeed, a VC needs to invest into many different projects at the seed phase or join successful game companies at high valuations after initial success. A special challenge is posed by, according to Tirkkonen, the point that past success is not a proof of future success. (Tirkkonen, interview 3.11.2017)

4.3.4 *Timo Ahopelto (Lifeline Ventures)*

Also Ahopelto from Lifeline Ventures stresses the team, and claims that the evaluation of the team in an early phase is even more important than evaluating the business plan. In this evaluation, earlier experience and shown results are in the most important role. The most important investment criteria Ahopelto states to be the team's background and the ability to execute. A criteria for immediate elimination from the deal flow is *founding a game company, because it is fashionable*. (Ahopelto, interview 13.11.2017)

Ahopelto sees an exceptionally strong team as the best characteristic to enhance the possibilities for an investment, and continues that the overemphasis of the team is also the distinct criterium when comparing the game industry and other industries. This is due to the fact that games are a hit-driven industry, *and like Madonna can year-after-year produce musical hits, a good game developer team can make at least a moderately successful game*. Another factor that should be taken into account while investing in game companies is that the VC needs to build a broad portfolio. (Ahopelto, interview 13.11.2017)

4.3.5 *Koopee Hiltunen (Neogames)*

Hiltunen from the Games Industry Association Neogames also begins with emphasising the team. For a team without experience it is very difficult to get funding. In this case the company needs a demo or to otherwise convince VCs through pitches or discussions. It is important that the team knows what to do and has a track record. This means business knowhow, good networks and technical, visual and design expertise, depending on the game. Hiltunen comments the business model indirectly by stating that since almost all (96%) of mobile game revenues come from free-to-play games, the developer needs good arguments if it aims to go for a premium game. At the moment the game markets are crowded and new models are being searched. Marketing knowhow is important for any team. (Hiltunen, interview 14.11.2017)

A criteria for elimination is being too small of a company when trying to acquire funding, since this makes the company non-investable. Major shortcomings in some crucial field of expertise is also an eliminating criterium, according to Hiltunen. He also states that *“getting an investment is selling,”* referring to a real want to get an investment. As special features which raise the probability of investment, Hiltunen lists the team and realistic and concrete plans. Industry familiarity and experience are premises for success. A company needs to be able to make good business in addition to making good games, and the ability to differentiate between these is important. Hiltunen states that *most teams*

are good at convincing that they can make a game, but game business is different. Hiltunen also stresses the prospects of long-term success, continuity in the business model and company. In his opinion success is a lot else than just making a great game, and the launch is just the beginning. (Hiltunen, interview 14.11.2017)

According to Hiltunen hits are unlikely, but needed in the industry. As the main difference to other industries Hiltunen states the novelty of the game industry: most VCs are not interested in the game industry, since they do not know it. The typical characteristics of the game industry - volatility, risk and the fast progress of technology, content and user habits - mean that VCs need to specialise. (Hiltunen, interview 14.11.2017)

4.3.6 Anonymous partner (Wave Ventures)

The partner and co-founder from Wave Ventures wants to specify, that due to its dominance in revenue terms, VCs invest mostly into mobile games, so that forms the context of evaluation. The venture team should have made lots of market research by themselves to show initiative. It is important to have a potential for large success, described as the “*one billion potential*”, which refers to having a market value of over one billion euros. This huge potential is needed to compensate for the high risks, and also to take into account further funding rounds. The partner from Wave Ventures is very systematic in his answer and list three most important investment criteria, with clear definitions.

The first one is the team, especially in the initial phase. The team should have a minimum of about five years of experience, optimal being 5-10 years and preferably from several games. The whole team is evaluated. Of special importance is business experience and understanding, and experience on publishing, not just development. The team should also have the *courage to kill your darlings*, which refers to an analytical and business-driven approach to game development, in contrast to a sentimental approach. Development decisions should be made based on the commercial results of any decision: no matter how dear the game or some feature of it is, if it does not create profit, it should be cancelled or modified. The team should also have user acquisition and marketing experience, since the game industry is not only about creating great games, but also getting lots of people to play them. The partner from Wave Ventures balances his view on the ability to be calculative by stating that in addition the team needs to have *passion, and not make games just based on statistics*. He sees team chemistry and mutual connection also important. (Partner from Wave Ventures, interview 15.11.2017)

The second criterium the partner from Wave Ventures states is focus. This means focus in genre and content specialisation. No company can master everything successfully. Focus also refers to demographic focus, e.g. making games for younger female players. Thirdly, focus refers to business model innovation and focusing on a certain revenue

model, scalability model and brand. By means of the different aspects of focus, the company can differentiate and win a loyal user base. (Partner from Wave Ventures, interview 15.11.2017)

The third crucial investment criterium is ownership, according to the partner in Wave Ventures. This refers to the potential to “*own the market*”, that is, be the dominant developer in the chosen niche and reach a very large user base. “*Copy-cats*” are avoided, and “*something new*” is searched for constantly, be it porting existing games to another platform, unserved demographics or genres or for example e-sports potential. The partner predicts that e-sports will be a factor of growing importance in the game industry.

According to the partner from Wave Ventures, eliminating criteria involve an inexperienced team, since the VC does *not want to be the teachers in the initial phase of the learning curve*, or simply a “*bad game*”. This perhaps represents the partner’s *intuition* and accumulated implicit knowledge on a quality of a game – the partner reveals to be a long-time gamer himself.

In general, the partner from Wave Ventures stresses, that the focus of a VC is on the company, not one game or possible hit. The developer needs to show promise for a profitable business model, having a good game itself is not enough. The industry is very data-driven, and this should be utilised. Game industry is uncertain, intangible, even “*close to art*” and as a result games need to be interesting. Due to these factors, many VCs do not invest in game companies at all, which should be taken into account by everyone seeking funding.

4.3.7 Findings by criterium

This chapter discusses the findings by criterium. Table 3 below summarises the results for the investment criteria to game companies that arose in the interviews, as well as the eliminating criteria. It must be noted, that the table contains lots of interpretation by the researcher, since the interviewees brought up similar issues in different words. It must be noted that the table only serves to categorise and illustrate the main results and it is not intended as a comprehensive representation of all of the results. The components of the criteria are described at the bottom of the table in italics. These classifications are formulated by the researcher to categorise similar but not completely equal answers.

Table 3 Interview results: the most important investment decision criteria (N=6)

Name of interviewee	Team experience	Team characteristics	Team game industry understanding	Product and/or business model continuity	Product characteristics	Market characteristics	Substantial potential	Portfolio suitability	Count of different criteria
Marko Tulonen	X		X	X	X	X			5
Tanu-Matti Tuominen	X	X		X	X	X	X	X	7
Timo Tirkkonen	X		X						2
Timo Ahoelto	X	X						X	3
Koopee Hiltunen	X	X	X	X					4
Anonymous (Wave Ventures)	X	X	X	X	X	X	X		7
Count of mentions (N=6)	6	4	4	4	3	3	2	2	
Components of criteria (classifications by the researcher)	Technical and content skills	Passion	Knowledge of game industry dynamics	Long-term revenue possibility	Appeal and novelty	Market size	Possibility for very large financial gains	Fits VC portfolio	
		Balanced team	Publishing expertise	IPR development possibilities	Genre	Platform			
		Ability to execute	Marketing skills		Market interest	Segment			
		Track record			Playable demo				

The most clear result from the interviews is that an experienced team is the most important single criterium: six out of six interviewees mentioned it. Experience refers to both technical and content experience. Also the next common criteria related to the team: both team characteristics and team game industry understanding got mentioned four times. The first refers to more subjective qualities such as passion, a balanced team and the ability to execute whereas the latter refers to the team's perceived competence in the game business, such as knowledge of game industry dynamics, publishing expertise and marketing skills. The emphasis of the team is understandable and in line with the results of prior research, summarised in chapter 3.

The team is perhaps emphasised even more than in prior studies. This is probably due to the nature of the game industry, in which human capital is crucial and successful business models are rather uniform, and competitive advantage is gained through great products and marketing. Many of the variables related to the team can also be assessed perhaps more easily than those related to products or certain segments in the game industry. Experience for example quantified in years or projects participated.

Product and/or business model continuity received as many mentions as team characteristics and team game industry understanding, four out of six. Under this criterion are collected answers which referred to long-term profitability or IPR development. This finding was unique to the game industry compared to prior research on general VC investment criteria, and probably reflects the fast-paced nature of the industry. Only Hisrich and Jankowicz (1990) mentioned company continuity as a criterium. In a market where

quality games are introduced every day and competition is fierce, a game brand which can stay profitable even a couple of years is a treasure, not to mention an IPR which generates value year after year, such as Mario, Sonic, Angry Birds, Clash of Clans or Max Payne.

Product and/or business model continuity could have been categorised under product or market characteristics, but the researcher found them such a distinct group of answer characteristic specifically to the game industry, that they were categorised as their own group. Market characteristics such as market size, platform or segment received three mentions, as did product characteristics such as genre, novelty, appeal, market interest and having a playable demo ready. Market and product characteristics are in some cases intertwined, and for example genre can be seen as a either or, depending on the point-of-view. The market characteristics were rather traditional, and in line with results from prior research, but product characteristics were more game industry specific. The most ambiguous, but still mention by many as important, criterium was some sort of appeal or market interest of the game. Product characteristics also showed division in the answers: some of the interviewees described the ideal game in detail, whereas some said bluntly that the game is not assessed at all, but the team and the company. In the researchers interpretation this reflects genuine differences in modes of operation and underlying investment philosophies of the VCs.

Criteria that can be described as *substantial potential* and *portfolio suitability* both received two mentions. The first refers to the possibility for very large financial gain – a certain threshold sum that needs to be exceeded with regard to possible profits - and the latter to a more vague fit to VC portfolio. Both make sense in the light of prior research. It might be that the other VCs take these for granted and did not mention them for that reason. They do not seem to be especially important in the game industry though, according to the interviews.

In the interviews, also eliminating criteria for an investment were asked. The eliminating criteria mentioned reflect the opposites of the positive criteria. These include “will not invest in ideas, "setting up a company because it's fashionable", “too small of a company; major shortcomings in some field” or “an inexperienced team”. All of these seem to be applicable for any industry, so game industry-specific eliminating criteria cannot be claimed to have been found.

It is also interesting to compare previous research to the interview results from the point-of-view of what was not mentioned at all. Many detailed criterium related to the product or financials did not receive any mentions, such as “creating a new market” or “liquidity of the investment”, not to mention “geographic location”. In contrast, most of the different details regarding the team can also be seen in the interview results.

In chapter 3.3, the researcher tried to predict what could be the special characteristics of VC investment criteria in the game industry. The researcher predicted, that most likely,

also in the game industry, the team is of high importance to the VC in making an investment decision, just like in other industries, but probably even more so due to the unpredictability of the industry. The interview results support this prediction. Zacharakis & Meyer (1998) claim that VCs focus shifts to the market when there is a lot of information and the VC is familiar with the market, but the findings in this thesis contradict this. There seemed to be an even higher emphasis of the team, although there is a lot – almost endlessly – information available about the game market. Actually, the game market might be one of the most well measured market there is. Although lots of the data is not public, much of it is. The researcher also noted, that previous literature is not detailed enough to assess whether VCs will try to evaluate the game or games of the venture or only the company. Regarding this question, the interviews yielded divided results: some VCs do assess the game, while other avoid it. The researcher also pondered whether VCs would pay special attention to reducing risk or retaining the value from game investments, where there is an increased risk of value leaking to human capital, and escaping the venture one way or the other. The interviews did not answer these questions directly, but show that at least VCs understand the game industry as risky, volatile and unpredictable. A somewhat surprising fact is that the interviewees did not differentiate between the screening and the evaluation phases of the venture process, although it was explicitly asked, whether there are differences.

To conclude with the results of the interviews, there seems to be no clear contradictions with the results of the interviews and prior research. The importance of the team is emphasised more in game industry and the importance of the continuity of the product or business model was a new finding that seems to be important in the game industry. Market characteristics seem to play a role in some VC's decision making, but are not universally critical to all VCs, like prior research suggests. Similarly, product characteristics divide the interviewees, and are discarded by some but stated as important criteria by some. Portfolio suitability and substantial profit potential receive some mentions. The VCs seemed to have similar views on the nature of the game industry, described in terms such as "risky", "fast-changing" and "unpredictable". In this kind of an investment environment it makes sense for the VCs to emphasise the team even more compared to other industries, since it is very difficult and/or time consuming to analyse every game in detail, whereas an experienced, efficient and balanced team with enough industry understanding should be able to succeed in varying situations. It was difficult to extract anything characteristically Finnish from the results. The interviewees did not emphasise it any way, except from perhaps mentioning the importance of networks. Geography did not present itself in the results. This probably reflects to international nature of the game industry. The market is completely global, and companies are more international than companies on average, with regard to partners and employees.

5 SUMMARY AND CONCLUSIONS

5.1.1 *Summary and key findings*

This chapter summarises the thesis and its key findings. The framework of the summary are the original research questions of the thesis, introduced in chapter 1. The theoretical purpose of the thesis was expressed in the form of the research question: *Based on previous literature, what criteria do VCs use in making investment decisions in game companies?* This question was supported and complemented by the subquestions: *What criteria do VCs use in the screening and evaluation of potential investments and what are the industry specific special characteristics of used criteria in the game industry* The main empirical research question was: *What criteria do Finnish VCs use while making investment decisions about whether to invest or not in a Finnish game company?* To aid in answering these questions, the thesis included a section introducing venture capital activities in general and in Finland, and the game industry, its dynamics and the Finnish game industry.

As outlined in chapter 2.1, VCs are a vital part of a developed financial system, and provide capital for new, usually technology-oriented ventures. They pool funds from investors, limited partners, and invest in various ventures, building a suitable portfolio. Only a few of the investments succeed, but profits are reaped from fastly growing ventures, from which the VCs try to exit via selling the venture or taking it public in an IPO. Venture capital activities are especially justified in sectors which require lots of specialised information, such as biotechnology and computer software – including games - rather than “conventional” sectors such as retail. For the entrepreneur, VCs are vital providers of capital, but the VC firm might also bring in expertise, access or networks beneficial for the venture.

A fairly uniform VC process has been identified. VCs screen a large deal offer flow for possible investments, evaluate the most promising ones in detail, negotiate a contract, manage the investment by monitoring, supporting and controlling the venture and finally exit the venture, reaping profits or minimising losses. The possible profits can then be re-invested or returned to the investors. During the process, the interaction between the VC and the venture might be extensive, and many VCs actually resemble more partners than just plain investors. Chapter 2.1.3 offered a brief outlook of the Finnish VC market and industry. It could be summarised as having risen from humble beginnings to a comparatively dynamic present, although remaining internationally small.

As expressed in chapter 2.2, it could be concluded that according to prior research VCs are heterogenous in making decisions, they do not necessarily know their own decision-making processes very well, they have several biases and that the criteria they use in

making investment decisions do not entirely correlate with venture success, i.e. the criteria are not correct. Nonetheless, though research is far from conclusive, research seems to strongly suggest that the competitiveness of entrepreneur and the team, the lucrative-ness of the market, the suitability of the product or service and profitable financial considerations are the main criteria for VC investments, as discussed in chapter 2.2.1. Although many previous studies might have problems due to the limits of the interview or survey methods, the most important VC criteria to invest seem to be related firstly to the team and secondly to the market, with other criteria holding less importance, although they are not irrelevant. Focus on the team and the market make sense intuitively, since a large and lucrative market is needed for a large enough success, but no success is possible without a team able to exploit the possibilities offered by the market.

The specific topic of this thesis is VC investing criteria while investing into game companies, and thus the game industry and its dynamics were introduced in chapter 3. The game industry is relatively new and growing quickly. The boom of the industry is due to cultural changes – playing is more mainstream than it used to be – as well as technological change. The emergence of smart phones has resulted in a powerful enough device in everyone’s pocket and high-speed wireless data transfer has made the distribution of games easy. Smart phones are common and relatively cheap in both developed and developing countries, making the potential market massive. New digital distribution models have also changed the industry dynamics significantly, empowering developers, leading to a tremendous increase in the supply of games. The large, global market and the possibility for a small developer to reach significant success have made game companies an interesting target for VCs. The Finnish game industry has benefited from the changes in game industry dynamics, and nowadays Finland can be characterised as a “game industry superpower” due to the large size of the game industry compared to the Finnish economy.

In chapter 3.3, the VC and the game industry were discussed in terms of previous research. The game industry is assessed as a volatile and fast-changing industry – a conclusion later supported by the empirical interview results. In this kind of an environment, according to the researcher’s anticipation, VCs would probably pay extra attention to mitigating risks, assessing the entrepreneurial team and less to financial considerations. The interviews found no evidence on the first but did on the two latter ones.

The empirical part of the thesis consisted of six interviews: five from venture capitalists and one from the Finnish Game Industry Association, Neogames. The interview results do not contradict the results from prior research. The interviews suggested that the importance of the team is emphasised more in game industry and the importance of the continuity of the product or business model was a new finding that seems to be important in the game industry. Market characteristics seem to play a role in some VC’s decision making, but are not universally critical to all VCs, like prior research suggests. Similarly,

product characteristics divide the interviewees, and are discarded by some but stated as important criteria by some. Portfolio suitability and substantial profit potential receive some mentions. Eliminating criteria included “not investing in ideas, “setting up a company because it's fashionable”, “too small of a company; major shortcomings in some field” or “an inexperienced team”. All of these seem to be applicable for any industry. The VCs seemed to have similar views on the nature of the game industry, described in terms such as “risky”, “fast-changing” and “unpredictable”. In this kind of an investment environment it makes sense for the VCs to emphasise the team even more compared to other industries, since it is very difficult and/or time consuming to analyse every game in detail, whereas an experienced, efficient and balanced team with enough industry understanding should be able to succeed in different situations.

The key findings of this thesis can be summarised in that the game industry does not fundamentally differ from general VC investment criteria, but certain criteria are emphasised. The general VC investment criteria - the competitiveness of entrepreneur and the team, the lucrateness of the market, the suitability of the product or service and profitable financial considerations - are all relevant, but the team is clearly even more emphasised when investing into the game industry. In more detail, the team needs to be experienced in both content and technical skills, have game business understanding, have marketing skills, be balanced, have passion and have the ability to execute. Moreover, the importance of the continuity of the product or business model was a new finding that seems to be important to VCs operating in the game industry. Market characteristics seem to play a role in some VC's decision making, but are not universally critical to all VCs, like prior research suggests. Similarly, product characteristics divide the interviewees, and are discarded by some but stated as important criteria by some. Portfolio suitability and substantial profit potential received some mentions, but did not stand out.

For a VC, these findings should suggest that systematic methods assessing a strong team might be useful in enhancing the investment decision process. Moreover, VCs might find it useful to try to evaluate other aspects of a company in more detail than just the team. Perhaps there is an unjustified overemphasis of the team due to the fact, that many VCs find assessing the different aspects of the game markets difficult? Is there an accessibility or availability bias when it comes to the team, since humans are clearly identifiable, whereas “market interest” or a certain segment might be more difficult to identify, not to mention evaluate? A VC might also benefit from special methods of mitigating the risks of the unpredictable, fast-changing game industry.

For a game venture, the implications of this thesis are more straightforward. To increase the possibilities of receiving funding from a VC, the venture should firstly acquire and then communicate the following: an experienced team in terms of both content and technical skills with minimum of five years of experience, understanding of game business, marketing skills, passion and the ability to execute; long-term revenue possibilities,

continuity of the business model and possibilities to develop the IPR; appeal and novelty in the game idea, demonstrated market interest and perhaps a playable demo; a large enough possible market via genre, segment and platform and thus a potential for a large financial success. The only perceived criteria which cannot be directly affected by the venture is VC portfolio suitability, but luckily it did not stand out amongst the most important criteria. All of the others can be developed systematically.

5.1.2 *Validity, reliability and generalisability*

This subchapter evaluates the validity, reliability and generalisability of the empirical findings of the thesis. Validity, reliability and generalisability are methods of assessing the usefulness and credibility of a study. All of this are always subject to interpretation and debate, and not binominal but rather degrees of the concept. Thus a study is not “reliable” or “not valid”, but rather “adequately reliable” or “weak in validity.”

Reliability means that the study can be reconducted, i.e. the findings can be tested by other researchers and confirmed or discarded. This means that there is a certain level of trustworthiness or predictability to the study. (Sailkind 2006, 106) Reliability can be increased by decreasing errors in the study. This can be achieved by increasing the number of observations or items, i.e. increasing representativeness, by eliminating items that are unclear, standardising conditions in which the test is taken, moderating the degree of difficulty of the test, minimising the effects of external events, standardising instructions and maintaining consistent scoring or testing procedures (Sailkind 2006, 108-109). Procedural reliability can be increased by a good research design, clearly specified research questions, a comprehensive research plan, recording all evidence in a coherent manner, and documenting the case analysis fully. In a sense, in a reliable study another person can examine what has been done, much like in an *audit trail* in accounting (Ryan et al. 2002, 155)

Types of reliability include test-retest, parallel forms, inter-rater and internal consistency reliability. Test-retest reliability refers to the consistency of measuring from one time to another. Parallel forms reliability means that two tests constructed in the same way from the same content are consistent. Inter-rater reliability refers to different raters or observers giving consistent estimates of the same phenomenon. Internal consistency reliability means that the results are consistent across items within a study. (Sailkind 2006, 110-113)

Validity refers to the accuracy of the study, i.e. that it measures what it is supposed to measure. It refers to the degree that the results are sound and truthful. (Sailkind 2006, 113). Validity refers to results, not the study itself. It is always, like reliability, a degree, not a binominal concept. It must be interpreted within context. (Sailkind 2006, 113-114)

Types of validity include content, criterion and construct validity (Sailkind 2006, 113-116). Content validity, also known as logical validity, refers to the extent to which a measure represents all aspects of a given theoretical or conceptual construct. Criterion validity means that there is correlation between a study's results and some criterion variable taken as a representative of a construct. Construct validity refers to the degree to which a study measures what it claims, or is supposed to be measuring. (Sailkind 2006, 113-116).

Internal validity refers to the extent the study measures the causal relations, i.e. cause and effect, correctly. External validity means generalisability to other settings (Ryan et al. 2003, 123-124). Generalisability or external validity is crucial when assessing the transferability of the results to other studies (Ryan et al. 2003 155). This means making general assumptions based on a particular study. Internal validity can be increased by increasing controls within the study, and for example survivorship bias can lower it (Ryan et al. 2003, 122-123). In general, external and internal validity start getting mutually exclusive at some point. Optimising for one reduces the other, and it is said that in fundamental research internal validity is of prime importance, whereas in applied research external validity is more important. In research it is important to constantly assess the validity of own interpretations. (Ryan et al. 2003, 155-156)

To compare, in quantitative research, reliability is to which extent evidence is independent of the person using it, and validity is the extent to which the data are in some sense a true reflection of the real world. In qualitative or case research these assumptions are inappropriate, for validity implies an objective reality and reliability implies an independent, impersonal investigator – whereas in qualitative research the particular, subjective assessments are often emphasised and the investigator's assessment and knowledge are an integral part of the research. (Ryan et al 155)

In qualitative research, one must accept a lower or at least different reliability, validity and especially generalisability compared to quantitative research (Saaranen-Kauppinen et al. 2009, 25). This can be seen, in a figurative sense, the price of a more holistic and perhaps deeper approach. Some researchers even avoid using the terms when assessing qualitative research. To achieve completely generalisable results in social sciences might mean that relevance might be lost if only statistically generalisable results are pursued. Most studies of course set in somewhere in the middle, and any kind of a high quality study might have generalisable results, even a case study, as Lukka and Kasanen (1995) argue. All in all, although whether the validity, reliability and generalisability of qualitative studies can be measured in same terms as quantitative research is question of the philosophy of science, and under debate, all studies, quantitative and qualitative should aim for credibility, some sort of relevance, trustworthiness and usefulness.

In general, in interview research, reliability and validity can be increased by for example recording interviews, so that other researchers assess the material, by using uniform,

written questions and reporting methods in each interview, by testing and practicing the interviews beforehand so that the interview situation is similar and by explicitly opening observations in writing. It is also important to separate the concepts of the researcher (emic) and the interviewees (etic). (Saaranen-Kauppinen et al. 2009, 26). When conducting interview research, it should be always be kept in mind that the interviewees might not – consciously or unconsciously – not tell the truth, or their subjective version of the truth (Saaranen-Kauppinen et al. 2009, 26). The self-reflection of the researcher is in crucial role in increasing the credibility of the study. For example the critical assessment of the interview situation is important, since e.g social expectations might affect the results. The visible part of self-reflection is to report the conducts of the study in a detailed manner and identify causes for possible errors in the study (Saaranen-Kauppinen et al. 2009, 26-27).

With regard to this thesis, the most common problems for validity, reliability and generalisability apply also to this study. Firstly, the interview questions might reflect the pre-suppositions of the researcher, based on for example flawed analysis of previous research. The interview situation itself might be a cause for error, if the interviewer for example unconsciously leads the interviewee to a certain direction. In this thesis, due to practical reasons, the interview situations were not completely uniform. Two interviews were live interviews, three were by phone and one was via email. This could have affected the results. Moreover, two of the interviews were conducted significantly earlier, almost five years, than the others, which might have had an effect. These issues possibly lower the reliability of the study.

The possible biases of the interviewees or incorrect analysis might decrease the validity of the results. Error might originate from the interviewees or the interviewer. It might be, that the interviewees answered what they answered to sound more professional or expert, rather than describing their own decision-making process. It might also be, that the interviewees are not aware of their own decision-making processes, as suggested by earlier research, or are not able to articulate them. The most probable sources of error nonetheless are related to faulty analysis by the researcher. The researcher might have misinterpreted some of the answers, taking less significant comments for important ones or vice versa. The comparison to prior research might also be faulty, and the differences between prior research and the empirical results of this study might be a result of something different than the researcher concluded, for example time of the study or region instead of industry. Different, even endless, analyses could be made from the same results, depending on the point-of-view.

The generalisability of qualitative studies with relatively few interviews is always debatable. Can the results be plausibly claimed to represent all of the Finnish VCs investing in game industry? Such a claim cannot statistically be made, and probably there are as many decision-making processes as there are decision-makers, but the researcher sees

that certain general characteristics typical to the industry can be seen from the results, at least in the clearest results.

The thesis also has certain obvious limitations. Firstly, it is limited on analysing the investment decision as a binary event, i.e. whether the VC decided to invest or not to invest into a company. While valuation's importance in the VC process is explained in brief, the sum of the investment is not taken into account in any way, since this would lead us to a very complex analysis of valuation¹¹, which is out of the scope of this thesis. This approach implies two assumptions: firstly, that all the investments the VCs undertake are significant, since otherwise the VC would not waste time and resources into it and secondly that no early stage investment is too large to threaten the whole fund.¹²

Although a very important part of VC activity, the focus of this thesis is on the first investment made by the VC to a certain firm, not the management of the investment, i.e. whole partnership between the VC and the venture. General business analysis is out of the scope of this thesis. At the same time, the focus is on early-stage investments, not investments into established companies. Early stage refers to a company life-cycle stage, where there is no significant history or e.g. financial data on the performance of the company (Lehtonen 2011).

Moreover, some topics such as the supporting role of the venture investor and complex decision-making models are touched upon only in brief due to the limited scope of the thesis. Though the importance of the investment portfolio is briefly acknowledged in this thesis, more complex portfolio analysis is out of the scope of this study. Portfolio is thus taken for granted, although probably it does affect any VC's investment decisions. These decisions on the scope of the thesis were necessary for practical reasons but of course limit the validity and reliability of the thesis.

5.1.3 Future research

This subchapter discusses possible future research on the broad topic. Firstly, studying the same topic, VC investment criteria in the game industry, with a different method might yield interesting results or verify the findings of this thesis. For example a large, quantitative survey study might provide statistically generalisable results. In this case, this qualitative study could be seen as the exploratory study for formulating a hypothesis, and the quantitative study would then be the study to test the hypothesis. Moreover, for example a deeper single-case study about a particular game company investment might

11 For a detailed discussion on firm valuation, see e.g. Damodaran 2011 or Keegan 2008.

12 If the investment would be too large compared to the relative size of the VC fund, it might be impossible from the point-of-view of risk management, even though the investment would otherwise meet the required criteria.

be able to open the internal processes and interactions in the decision-making and the final investment criteria. Also, for example conjoint analysis might give interesting insights into whether VCs actually use the investment criteria they say they do.

Broadening the subject, various statistical studies about the characteristics and correlations of game company investments and VC firms could yield interesting results. What sort of game firms receive investments in reality? What sort of VCs operate in the game industry? Probably the most useful studies for VCs would focus on real venture success: what sort of companies succeed and how can they be best identified in the investment process? This question can also be flipped, and one could try to find signals of firms which will fail, increasing the knowledge on the eliminating criteria, also touched upon in this thesis. For a VC it is extremely useful to identify the probable failures quickly, not just to try to identify the tremendous successes.

For game companies, understanding VC decision-making and investment criteria in more depth in general is useful. Perhaps the most useful studies would relate to deepening understanding on specific criteria. What sort of a team specifically is evaluated as “experienced” or having “industry understanding”? How does a VC assess the “long-term profit potential” of a game developer? Also, game companies would certainly benefit from more developed models of assessing different games, genres and segments from a financial point-of-view.

On a yet broader scale, whole industry dynamics and the financial interactions in the game industry offers a wealth of study possibilities. Why do certain VCs avoid the game industry altogether? By identifying and controlling these limiting factors compared to other industries, the whole game industry could try to attract more VC investments in general by reducing the risk perceived by VCs.

Venture capital investment criteria offer various future research possibilities. Perhaps traditional survey studies on general investment criteria do not have as much to offer as they did before for example the 1990s, but firm-stage, industry or geography specific studies do, as well as more sophisticated studies of a certain part of the VC process. As a new, booming industry, the game industry certainly offers an interesting framework for research, in accounting, finance and other fields of study.

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APPENDICES

APPENDIX 1 – THE INTERVIEW STRUCTURE

Translated from Finnish

Introduction

This interview will be a part of my master's thesis, conducted for the Turku School of Economics. The topic of my thesis is venture capital initial investment criteria into Finnish game companies.

The interview can be conducted publicly or anonymously. The general results of the thesis are of course public, but all material indicated by You is confidential. The interview as such will only be read or heard by my supervisor and me, and we are bound by the legal requirement of confidentiality. You can thus answer freely, but please mention especially sensitive information.

All questions can be answered completely freely. Other issues, which You assess as important, can be raised, in addition to the ones mentioned in the questions. If You wish, You can also use example from investments You have made or haven't made into game companies.

The questions

Background questions:

- Please introduce yourself and your experience on initial stage venture capital and especially on investing in game companies.
- Can Your company be mentioned in the master's thesis?
- Can Your name be mentioned in the master's thesis?

Main questions:

In my thesis, based on previous research, I assume that the assessment of possible investments is divided mainly into two phases: mainly on the business plan and other literary material -based preliminary screening and a more thorough interview and other material -based holistic evaluation.

1. Especially when deciding on a possible investment into a game industry company, which criteria do You use in:
 - a. The preliminary screening phase?
 - b. The more thorough evaluation phase?
2. Which criteria definitely eliminate an investment proposal?

3. Which criteria especially enhance the possibilities that you invest into the game company?
4. Which criteria get emphasised especially in the game industry compared to other industries? Why?
5. Other possible remarks on investing in game companies?