

VENTURE CAPITALISTS' PRODUCT AND MARKET RELATED INVESTMENT CRITERIA



An Empirical Study about Early-Stage IT and Internet Venture Capitalists
in the Netherlands, Singapore, and Sweden

Thomas Mensink

UNIVERSITY OF TWENTE.



Document information

Title: Venture Capitalists' Product and Market Related Investment Criteria
Description: An Empirical Study about Early-Stage IT and Internet Venture Capitalists in the Netherlands, Singapore, and Sweden
Tags: Venture capital, investment criteria, VCs, B&M Business Development, entrepreneurs, funding, product and market related criteria, early-stage, IT and Internet, due diligence, Singapore, Sweden, the Netherlands, rejection rate, five-point Likert scale
Type: Bachelor Thesis
Date: 21-12-2010
Version: Final version

Candidate

Name: Thomas Mensink
Student number: 0114197
Study: Industrial Engineering & Management
Email: t.j.mensink@student.utwente.nl

University

University: University of Twente
Faculty: School of Management and Governance
Department: Dutch Institute for Knowledge Intensive Entrepreneurship (NIKOS)
Website: <http://www.utwente.nl/en>

Principal

Name: B&M Business Development
Website: <http://www.bmbd.nl>

Graduation committee

Dr. J.M.J. Heuven University of Twente
Dr. Ir. J. Kraaijenbrink University of Twente
G.B. Meijer MSc B&M Business Development

Management summary

Introduction

Entrepreneurs who are looking for venture capital funding present their venture proposals to venture capitalists (VCs). VCs use investment criteria to evaluate the proposals and assess the ventures' potential. This study zooms in at the investment criteria that VCs use and their relative importance.

B&M Business Development (the principal) and many high-tech entrepreneurs do not sufficiently know how VCs evaluate new venture proposals and what investment criteria they use when they decide whether or not to invest in the enterprise.

The objective of this research is to get qualitative as well as quantitative information about how VCs evaluate new venture proposals, what investment criteria they use, how important these investment criteria are, and how they decide to reject proposals or to invest in ventures. In order to get concrete results, this research has a focused perspective on the product and market related investment criteria that VCs in the Netherlands, Singapore, and Sweden use at the due diligence phase when they invest in early-stage ventures that are active in the IT and Internet industry.

Literature review

Investment criteria of VCs have been studied in the past. Previous literature found that – above all – the management team related criteria are considered predominant. However, these researches all have multiple shortcomings because they did not make a distinction in their research population. Previous studies combined the responses of different kinds of VCs, which led to generic findings. As a result, the (importance of) criteria found in previous literature are not specific enough for this research to be useful. Therefore, this research has a focused research scope. It wants to test whether the entrepreneurial team related criteria are indeed more important to VCs than product and market related criteria, as previous studies would suggest.

Research design

The methods chosen to eventually be able to find the (relative importance of) product and market related investment criteria consist of three key elements: (1) a preliminary

questionnaire, (2) a semi-structured interview and (3) a final questionnaire afterwards. In the final questionnaire VCs were asked to assign scores to in total 76 investment criteria. The mean and standard deviations of all responses are calculated for each country. In addition, a prediction of the proposal rejection rate is calculated so that entrepreneurs can assess their chances to receive venture capital funding if their venture fails on one or more criteria.

Findings

With respect to the *categories* of criteria (the average score of all criteria in the category) the VCs in the Netherlands find product related investment criteria overall the most important, closely followed by the entrepreneur’s personality related criteria and the market related criteria. In Singapore and Sweden, the category with entrepreneur’s personality related criteria scores the highest, followed by financial respectively market related criteria. The criteria that relate to the entrepreneur’s experience are overall rated the least important in all three countries. An overview is provided in the table below.

Rank	The Netherlands		Singapore		Sweden	
	Category	Mean	Category	Mean	Category	Mean
1	Characteristics of the product or service	3.69	The entrepreneur's personality	4.02	The entrepreneur's personality	3.60
2	The entrepreneur's personality	3.68	Financial considerations	3.82	Characteristics of the market	3.49
3	Characteristics of the market	3.66	Characteristics of the product or service	3.75	Characteristics of the product or service	3.41
4	Financial considerations	3.56	Characteristics of the market	3.70	Financial considerations	3.37
5	The entrepreneur's experience	3.45	The entrepreneur's experience	3.48	The entrepreneur's experience	3.20

Ranking of the five categories of criteria.

These results seem to be consistent with previous literature in that the criteria that relate to the entrepreneur (in this case the category ‘the entrepreneur’s personality’) are predominant.

When all criteria are analysed individually, the criteria ‘the technology is scalable’ and ‘the revenue model is scalable’ have the highest means in Singapore and the Netherlands. The VCs also reach a high level of consensus about these criteria. In Sweden the criterion ‘the

technology provides a sustainable competitive advantage' scores the highest. However, there is some disagreement between the VCs. The top five criteria are presented in the table below.

Rank	The Netherlands		Singapore		Sweden	
	Criterion	Mean	Criterion	Mean	Criterion	Mean
1	The revenue model is scalable	4.83	The technology is scalable	4.64	The technology provides a sustainable competitive edge	4.40
2	The technology is scalable	4.67	The revenue model is scalable	4.55	People will pay for the product	4.22
3	The entrepreneur can demonstrate a market demand	4.67	The technology provides a sustainable competitive edge	4.45	The venture has a large growth potential	4.22
4	The target market has a large growth potential	4.67	Capable of sustained intense effort	4.45	The product has a strong value proposition for a specific target market	4.22
5	People will pay for the product	4.64	The target market has a large growth potential	4.45	The implied growth rate between the ventures' size today and in 3-5 years is realistic	4.22

Ranking of the investment criteria with regard to the importance of criteria higher than 3.75.

These results seem to contradict previous literature; all top five criteria in the three countries relate to the product or market and none relates to the entrepreneur.

The rejection rates have been evaluated to find out the percentage of VCs that is still interested in the venture even if it has one or two flaws. Amongst the criteria that have the highest rejection rate in the Netherlands, no single criterion relates to the entrepreneur. Instead, all the criteria relate to the market and the product category. In the same way, the rejection rate can be calculated for ventures that lack two criteria. In the Netherlands, a proposal that lacks a scalable revenue model *and* cannot demonstrate a market demand would lead to a rejection of *all* participating VCs. Eight case studies show how the rejection rates could be used in practice to estimate a venture's rejection rate based on a number of flaws in its proposal.

Conclusions

The conclusion of this research is that this research confirms the conclusions of previous studies that *overall* the entrepreneur related criteria are most important to VCs, because on average the criteria that relate to the entrepreneur's personality category scores high in all three countries. However, when the criteria are analysed individually, it can be seen that there

is a large number of individual product and market related criteria that score higher (thus are more important), have a higher rejection rate, and are less likely to have a zero rejection rate than entrepreneur related criteria. Because the product and market related criteria contribute more to the decision of a VC to invest in a venture, and because the product and market related criteria contribute more to the rejection of venture proposals, this research finds that product and market related criteria are more important than entrepreneur related criteria.

Implications and future research

Four stakeholders have been identified that could use (the results of) this study; the research community, the entrepreneurial community, B&M (the principal), and the venture capital community. For all four stakeholders the implications and applications are presented. For the research community, several directions for follow-up studies are suggested. Entrepreneurs can use the results of this study to evaluate their venture on the characteristics that VCs find important. B&M Business Development can help entrepreneurs to evaluate, using a tool that can assess the strong and weak points of the ventures. VCs can use the findings as a benchmark to compare the importance they assign to their investment criteria with the presented overall weights of other VCs in the industry. This can help them to develop a distinguishing position in the market.

Acknowledgements

This research is conducted to complete my bachelor study Industrial Engineering & Management at the University of Twente. During the last seven months I have spent my time in Singapore, Stockholm, and all across the Netherlands with the greatest pleasure.

I am very grateful to everyone that helped and supported me with this research. Special thanks goes out to Gilles Meijer and Jaap Beernink for giving me this wonderful experience and providing me with useful feedback during our weekly (call) meetings. I would also like to thank my supervisor Joris Heuven for helping me to find the “niche” for this research, improve this papers’ structure, and provide excellent comments. In addition, I would like to thank Jeroen Kraaijenbrink for challenging me and asking the right questions. All of you have contributed positively to the quality of my research and report.

This research has not always been easy to conduct: “I would not advise you to fly into Singapore with the expectation that you will be able to interview any VCs” and “I’m afraid that you’ve chosen the worst possible time to come to Stockholm.” However, thanks to all the venture capital firms that participated, I managed to write this report. Thank you very, very much.

Several organisations helped me very well with getting into contact with venture capitalists. Therefore I would like to thank the Singapore Venture Capital Association (SVCA) – and in particular Ms Li who contributed a lot to my publication in the SVCA directory, the Swedish Venture Capital Association (also SVCA), STING, and all the individual professionals that helped me. I would also like to thank Zhiqiang Xia, Staffan Gullander, Hans Heerkens, and Pranab Mandal for helping me with the scientific part of the paper.

Thanks to you too, Marlous, for listening to my venture capital stories for the last eight months and for reviewing this report in a very helpful way. Finally, I owe a big “thank you” to my parents and grandparents who supported me financially. If I would represent a new venture, then they have definitely been my venture capital funders.

Thomas Mensink

Enschede, December 2010

Table of contents

Management summary	iii
Acknowledgements	vii
Table of contents	viii
1. Introduction	1
1.1 Introduction to venture capital	1
1.2 Problem identification	2
1.3 Research scope and objectives	4
1.4 Problem statement and research questions	6
1.5 Definitions used.....	7
1.6 Report outline.....	8
2. Literature review	9
2.1 Previous research.....	9
2.2 Shortcomings of previous research	12
2.3 Contributions of this chapter to the research questions.....	14
3. Research design.....	16
3.1 Methodology framework.....	16
3.2 Data collection.....	18
3.3 Data analysis	22
3.4 Limitations	24
3.5 Contributions of this chapter to the research questions.....	26
4. Findings.....	27
4.1 Sample.....	27
4.2 Product and market related criteria	30
4.3 Importance of investment criteria	30
4.4 Essential criteria	39
4.5 Case studies	44
4.6 Contributions of this chapter to the research questions.....	48
5. Conclusions	50
6. Implications and future research	54
6.1 Research community.....	54

6.2 Entrepreneurial community	57
6.3 B&M.....	58
6.4 Venture capital community	59
References	61
Appendices	65
Appendix I: Background to venture capital and VCs	65
Introduction to venture capital	65
Introduction to VCs	65
Appendix II: Research scope (extensive version)	68
Industry perspective: IT and Internet industry	68
Geographic perspective: the Netherlands, Singapore, and Sweden	69
Investment stage: early-stage	71
Phase of the decision process: due diligence phase	72
Investment criteria: product and market related.....	74
Appendix III: Preliminary questionnaire.....	77
Appendix IV: Final questionnaire	79
Appendix V: Participating VCs.....	82
Appendix VI: Product and market related criteria	83
Appendix VII: The importance of investment criteria	86
Appendix VIII: Case studies	89
Case 1: Cloud computing	89
Case 2: Image search.....	90
Case 3: Configuration management software	91
Case 4: Social network space	92
Case 5: Study choice platform	92
Case 6: Online news portal.....	93
Case 7: E-cards.....	94
Case 8: Digital photo authentication system	95

1. Introduction

This chapter presents the motivation behind this research. First, the subjects venture capital and investment criteria are introduced. After this, the problem that forms the basis of this research is identified. In order to solve this problem and to come up with concrete and relevant results, a research scope presents the focus of the study. Finally, the research questions state the different aspects that will be researched in this paper.

1.1 Introduction to venture capital

At the beginning of 2010, a venture capitalist read the business proposal of Venture A. Venture A had created an online social network space and was looking for venture capital to really “get off the ground”. The social network space was new and different compared to other social network spaces. The venture capitalist liked the founder and mentioned that Venture A had a solid entrepreneurial team. Despite that, the venture capitalist decided not to invest in Venture A. After extensive research the venture capitalist was not “comfortable enough” that the social network space of Venture A would create “a sustainable advantage”. The venture capitalist also expected that market traction – to secure one or multiple paying customers – was hard to establish for Venture A because of the rapid developments in the social network industry. Therefore, the venture capitalist argued, the market position of the social network space of Venture A would be “very hard to defend” in short or middle term.

Entrepreneurs who are looking for venture capital funding present their venture proposals – including information about the management team, financial forecasts, the product, and the market – to venture capitalists (VCs)¹. The case above demonstrates some of the investment criteria that the VC used to evaluate Venture A’s proposal and to assess the ventures’ potential.

Venture capital is typically raised by VCs and invested in high-growth, high risk, often high-technology early-stage firms that need capital to finance product development or growth (Black & Gilson, 1998). Besides investing capital, VCs also provide other relevant factors like managerial and technical expertise, and access to important networks for (amongst others) business contacts and recruitment of senior managers (Hellmann & Puri, 2000; Davila, Foster,

¹ In the rest of this paper, ‘venture capitalists’ will be referred to as ‘VCs’.

& Gupta, 2003; Payne, Davis, Moore, & Bell, 2009). Venture capital is therefore often referred to as “smart money”.²

According to e.g. Hall & Hofer (1993) and Zutshi, Tan, Allampalli & Gibbons (1999) the investment criteria of VCs have been the dominant stream of research relating to the investment decision process. Different studies have identified various investment criteria, but the outcomes of those studies do not always indicate consensus with respect to which criteria are most important in the investment decision of VCs (Tyebjee & Bruno, 1984; Siskos & Zopounidis, 1987; Baeyens, Vanacker, & Manigart, 2006).

This study focuses on the investment criteria that VCs use and their relative importance. It has been argued that understanding the criteria employed by successful VCs could lead to “a better understanding of the reasons for the ventures' success [...] and to improvement in the success rate of new ventures” (Hall & Hofer, 1993, p. 25).

The principal of this research is B&M Business Development³ in Enschede, the Netherlands. B&M is one example of an enterprise for which more insight in the VCs' investment decision process can contribute to their professional quality. For this reason, B&M plays a central role in defining the research problem in the next section. B&M is especially interested in getting a better understanding of the investment criteria of VCs to help their clients, often early-stage high-tech ventures, in raising the necessary venture capital funding.

1.2 Problem identification

This study assumes that many high-tech entrepreneurs do not sufficiently know how VCs evaluate new venture proposals and what investment criteria they use when they decide whether or not to invest in the enterprise. This is based on the fact that less than two percent of the deals that enter the decision process (see p. 72) ultimately receive an investment from the VC (Fried & Hisrich, 1994)⁴. Entrepreneurs either are ignorant or unaware, or base their knowledge about the evaluation process or investment criteria of VCs on general (scientific) studies which are not always relevant to the entrepreneurs. The results of these studies are

² A more thorough introduction to venture capital and VCs is presented in ‘Appendix I: Background to venture capital and VCs’.

³ In the rest of this paper, ‘B&M Business Development’ will be referred to as ‘B&M’.

⁴ Besides the entrepreneurs' lack of knowledge about VCs, entrepreneurs may also value their venture characteristics higher than VCs do (that is, entrepreneurs overestimate themselves). This could also explain the high rejection rate of more than 98 percent.

frequently published at entrepreneurial websites or blogs. Entrepreneurs are often not aware of the fact that they base their knowledge on incomplete or irrelevant sources and therefore they do not have the *perception* of a problem.

So why are general studies with regard to the evaluation process and investment criteria of VCs often incomplete or irrelevant to entrepreneurs? Literature suggests that the evaluation process and (the importance of) investment criteria of VCs depend on a number of variables (amongst others):

- the industry of the venture;
- the stage of the venture;
- the phase in the decision process;
- the country where the VC operates.

Carter & Van Auken (1994, pp. 66-70) and Fried & Hisrich (1994, p. 30) found that the project management control and exit procedures as well as the importance of investment criteria (e.g. exit potential and cost structure) is different between *early-stage* and *late-stage* VCs. With regard to the industry focus of the VC, Baeyens et al. (2006) state that investment criteria are different per *industry*. Products in the biomedical industry for instance have longer time-to-market than products in the IT industry which also influences the investment criteria used. In addition, it also makes sense that investment criteria differ per *phase* in the decision process of VCs. That is also the reason why Zacharakis & Meyer (2000) focused their study on the screening stage. Although Muzyka et al. (1996) hypothesized that the decision models would not vary significantly by *country* (in Europe), the comparative study of Zutshi et al. (1999) proved otherwise. Criteria *do* differ per country, has been one of their findings.

Concluding, several studies indicate that the (importance of) investment criteria of VCs are dependent of the stage of the venture, the industry of the venture, the phase in the decision process, and the country where the VC operates. In order to get more concrete results, literature therefore suggests that researchers should narrow their scope and choose one (or as little as possible) section per stage, industry, phase, and country. For example, in the variable 'stage' the researcher should make decision about studying early-stage or late-stage ventures. This is also in line with the recommendation of Zacharakis & Meyer (2000, p. 343) that future

models to assess VCs' evaluation of proposals “need to be geared towards a firm's specific criteria (i.e., stage, industry, etc.)”.

Nevertheless, in literature there has not been a study yet that researches the investment criteria and their relative importance from a specific *focussed* perspective⁵. In other words, even *if* entrepreneurs search for relevant information about investment criteria, they simply cannot find it in literature. That makes this topic a scientific problem. The only way to solve this information ‘gap’ is to expand literature with an empirical study. The identified problem is therefore ‘literature does not sufficiently provide concrete⁶ information about how VCs evaluate the venture proposals’. This solution of this problem is relevant not only for B&M, but in the first place also for high-tech entrepreneurs who seek venture capital funding.

1.3 Research scope and objectives

1.3.1 Research scope

The identified scientific problem involves too many factors for this research. For example, the mentioned problem does not discriminate between industries or investment stages. Solving this general problem would probably demand too many resources like time and money, and/or would lead to conclusions that would be too generic to be of any use for the relevant parties, like entrepreneurs who are looking for venture capital funding.

As explained in the previous section, findings about the evaluation process and investment criteria of VCs depend on a number of variables (i.e. investment stage, stage in the decision making process, industry perspective, and geographic perspective). Researchers should choose to study one section per variable in order to get more concrete results. This research did so as well. The result – the scope of this research – is presented in Table 1.

Variables	Focus areas of this research
The industry of the venture	IT and Internet industry
The stage of the venture	Early-stage
The phase in the decision process	Due diligence phase
The country where the VC operates	The Netherlands, Singapore, and Sweden

Table 1: The research scope as the focus areas per variable.

⁵ This will be further elaborated upon in chapter 2.

⁶ In this research ‘concrete’ means ‘relevant, unambiguous, and useful to a specific target group of entrepreneurs’.

Concluding, this research focuses on the evaluation process of VCs in *the Netherlands, Singapore, and Sweden* at the *due diligence* phase when they invest in *early-stage* ventures that are active in the *IT and Internet* industry. This research scope has been determined by looking at the practical arguments, the relevance for B&M and its clients, and the contribution of new information to previous literature. The IT and Internet industry is chosen mainly because it is expected that the investment criteria that VCs use to evaluate IT and Internet related venture proposals are more concrete and measurable than the criteria used to evaluate venture proposals in industries with a longer time to market, like the biomedical or cleantech industry. The Netherlands, Singapore, and Sweden are chosen because of their large IT and Internet industry and high ICT readiness level (World Economic Forum, 2010). The focus is on the due diligence phase because this phase of the decision process is regarded as the most important and time consuming for VCs to evaluate the venture's potential. Therefore, most knowledge could be gained in studying this phase. With regard to the stage of the venture, early-stage is the focus area of this research. In early-stage ventures, venture capital is an appropriate form of financing because of its high risk attitude and the potential for extraordinary high rewards when the entrepreneurial venture is successful (Tyebjee & Bruno, 1984; Manigart, et al., 2002).

Focus areas within the four variables are chosen and kept constant in order to minimize any preset biases that could influence the results. Other areas fall outside the scope of this research.

The detailed considerations and motivation for choosing this research scope is presented in 'Appendix II: Research scope (extensive version)'.

1.3.2 Research objectives

There appears to be a discrepancy between (1) the knowledge about VCs' investment criteria and decision process that this research *wants* and (2) what the available scientific literature *offers*. This study aims to bridge that gap, by expanding the current knowledge of the investment decision process in the mentioned specific research scope. Because of this research scope, this research aims to provide relevant parties with *concrete* instead of *general* findings in the four chosen focus areas (see previous section). The objective of this research is to get qualitative as well as quantitative information about how VCs evaluate new venture proposals, what investment criteria they use, how important these investment criteria are, and based on what criteria they decide to reject proposals or to invest in ventures.

1.4 Problem statement and research questions

This section will present the basis of this research; the problem statement and the resulting research questions.

1.4.1 Problem statement

It is already explained in section ‘1.2 Problem identification’ that current literature about VCs’ evaluation process does not sufficiently provide concrete information because previous studies have not used a focused perspective. The focus of this research is presented in section ‘1.3 Research scope and objectives’ as “the evaluation process of VCs in *the Netherlands, Singapore, and Sweden* at the *due diligence* phase when they invest in *early-stage* ventures that are active in the *IT and Internet* industry”. Within this focus area the problem statement of this research is:

What investment criteria do VCs use - and how important are these criteria - when they evaluate ventures’ proposals?

Problem statement of this research.

Within this problem statement, this research wants to put emphasis on the product and market related investment criteria. There are two main reasons to do so. First, previous literature stressed the importance of the (competences of) entrepreneur or entrepreneurial team in obtaining venture capital. Many good studies have already been dedicated to the size, composition and characteristics of the management team (e.g. by Rosenstein, 1988; and Rosenstein et al., 1993). This knowledge about the management team has therefore already been widely documented.

Besides the entrepreneurial team, also product and market related investment criteria and – to smaller extent – financial, strategic and deal related investment criteria have been identified and quantified. Compared with these financial, strategic, and deal related criteria, the product and market related investment criteria have most influence on the VCs’ proposal evaluation, according to several previous studies (e.g. Tyebjee & Bruno, 1984; MacMillan et al., 1985; Rah, Jung, & Lee, 1994). This research wants to test whether the entrepreneurial team related criteria are indeed more important to VCs than product and market related criteria, as previous studies would suggest. Therefore this research places emphasis on the product and market related investment criteria rather than on the entrepreneurial team related criteria.

1.4.2 Research questions

The problem statement consists of several aspects that should be known before the problem statement can be solved. These aspects can be solved by answering research questions. The following research questions are chosen in such a way that they include all aspects of the problem statement without overlapping each other and that they are in line with the earlier stated research goal:

1. What methods, conclusions, and shortcomings can be found in previous literature about investment criteria that VCs use when evaluating ventures?
2. What product and market related investment criteria do VCs use when evaluating ventures?
3. How important do VCs consider these product and market related investment criteria when evaluating ventures?
4. How important are these product and market related investment criteria compared to the importance of other criteria that VCs use when evaluating ventures?

Whereas the second and third research question strive to identify the product and market related criteria and to quantify their importance in an absolute way, the fourth research question aims to put the importance scores of the product and market related criteria in context with other investment criteria (e.g. entrepreneurial team and financial related criteria) both on a category level and criterion level. This is done in order to avoid the formulation of an isolated view about the investment criteria that VCs use.

Section '1.6 Report outline' will discuss the contents of the subsequent chapters of this paper. It will also present in which chapters the research questions will be answered. First, the definitions that are used in this paper will be presented in the next section.

1.5 Definitions used

In this paper product characteristics are defined as both physical and intangible properties that relate to both the product and/ or technologies of a new high-tech venture. The market characteristics are defined as the properties of the (future) market of the product of a venture as well as the value proposition and revenue model. Since there are no uniform definitions of 'high-tech', in this research ventures are reasonably classified 'high-tech' when they develop and/ or, produce advanced technology in the IT and Internet industry. As described in

‘Appendix II: Research scope (extensive version)’, the IT and Internet industry in this research also covers enterprises in the Information Communication Technology (ICT), software, and telecommunications industry. Venture capital is, in accordance with section ‘1.1 Introduction’ and ‘Appendix I: Background to venture capital and VCs’ defined as an equity investment in exchange for shares in the invested company.

This research aims to rate the importance of market and product characteristics of new high-tech ventures that are both derived from previous literature and to be newly discovered during the empirical part of the research. Therefore this research consists of both a confirmatory (previous literature) and exploratory part (empirical research). However, the problem statement is formulated in such a way that the data gathered during this research will mainly be used to generate hypotheses from the data set *afterwards*. For this reason this research has been labelled as exploratory (Jaeger & Halliday, 1998). This is also the reason why no hypotheses have been formulated a priori about the possible outcomes (e.g. expected values and differences between the Netherlands, Singapore, and Sweden).

The research population of this research is formed by VCs in the Netherlands, Singapore, and Sweden that invest in early-stage ventures in the IT and Internet industry.

1.6 Report outline

This paper proceeds as follows. Chapter 2 will zoom in on previous literature about investment criteria that VCs use when evaluating new venture proposals. Also the shortcomings of the available literature will be discussed. Both will solve the first research question. The output of chapter 2 also influences the methodology to solve other research questions. In chapter 3 this methodology will be presented. A three-step method is used to generate the data: (1) preliminary questionnaires, (2) interviews and (3) final questionnaires. The data analysis methods are also discussed in chapter 3. The results of the interviews and questionnaires are then discussed in chapter 4. The results of this chapter will answer the second, third, and fourth research question. The conclusions of this research are presented in chapter 5. Finally, the implications of the results of this study for VCs, entrepreneurs and B&M are presented in chapter 6, as well as a discussion and directions for future research.

2. Literature review

Section '1.2 Problem identification' has already discussed some previous research about the investment criteria of VCs. This chapter will elaborate further on past studies by providing an overview of the most important research and its results and conclusions. In addition, the shortcomings of available literature are discussed in the second section of this chapter.

2.1 Previous research

Previous research in the field of investment decisions of VCs has been summarized by Zopounidis (1994) and subsequently by Muzyka, Birley, & Leleux (1996). The findings of earlier research about investment criteria have identified different sets of criteria used by VCs to evaluate new venture proposals. Interesting overviews of the findings of previous studies are presented by Hall & Hofer (1993, pp. 26-27) and Zacharakis & Meyer (2000, p. 327). Several identified key criteria, for example characteristics of the entrepreneurial team, are consistent across various studies.

One of the five studies examined by Hall & Hofer (1993) is the formal study of MacMillan et al. (1985). This study is one of the first well recognised attempts to identify the criteria used by VCs to evaluate new venture proposals and is often cited in the literature. The survey instrument and the criteria identified in this study form a basis for several other empirical studies about the investment criteria of VCs (e.g. Knight, 1986, in Canada; Ray, 1991; and Zutshi et al., 1999, in Singapore). MacMillan et al. (1985) established twenty-seven criteria that they assembled into a questionnaire. A total number of 102 VCs rated the criteria on a four-point scale, where '1' means irrelevant and '4' means essential. The result is presented in the left column of Table 2. In the right column the findings of the of Zutshi et al. (1999), who used MacMillan's methodology to study the investment criteria of 31 Singaporean VCs, are presented.

The most important finding of MacMillan et al. (1985, p. 128) is that "above all it is the quality of the entrepreneurs that ultimately determines the funding decision". Five of the top ten most important criteria are related to the entrepreneur's personality or experience. Zutshi et al. (1999) found that the investment criteria of VCs in Singapore are similar to those of VCs in the U.S.. The top five most important criteria used by Singaporean VCs are all focused on the entrepreneur.

Criteria	MacMillan (U.S.)		Zutshi (Singapore)	
	Mean	Rank	Mean	Rank
The entrepreneur's personality				
Capable of sustained intense effort	3.60	1	3.58	2
Able to evaluate and react to risk well	3.34	5	3.52	3
Articulate in discussing venture	3.11	9	2.61	12
Attends to detail	2.82	11		
Has a personality compatible with mine	2.09	18		
The entrepreneur's experience				
Thoroughly familiar with the market targeted by venture	3.58	2	3.61	1
Demonstrated leadership ability in past	3.41	4	3.52	3
Has a track record relevant to venture	3.24	7	3.39	5
The entrepreneur was referred to me by a trustworthy source	2.03	19		
I am already familiar with the entrepreneur's reputation	1.83	21		
Characteristics of the product or service				
The product is proprietary or can otherwise be protected	3.11	9	2.94	9
The product enjoys demonstrated market acceptance	2.45	12	3.10	7
The product has been developed to the point of a functioning prototype	2.38	14	2.94	9
Product may be described as "high tech"	2.03	19		
Characteristics of the market				
The target market enjoys a significant growth rate	3.34	5	3.35	6
The venture will stimulate an existing market	2.43	13		
The venture is in an industry with which I am familiar	2.36	15		
There is little threat of competition during the first three years	2.33	17		
The venture will create a new market	1.82	22		
Financial considerations				
I require a return equal to at least 10 times my investment within 5-10 years	3.42	3	2.84	11
I require an investment that can be easily made liquid (e.g., taken public or acquired)	3.17	8	3.00	8
I require a return equal to at least 10 times my investment within at least 5 years	2.34	16		
I will not be expected to make subsequent investments	1.34	23		
I will not participate in latter rounds of investment (requires my participation in the initial round of investment)	1.20	24		

Table 2: The criteria and results that MacMillan et al. (1985) (left column) and Zutshi et al. (1999) (right column) found on a four-point scale. The rank of the mean score is also provided.

Carter & Van Auken (1994) used the same categories and methodology as MacMillan et al. (1985), but made a distinction between early-stage and late-stage ventures. Their results were similar to MacMillan's; eight of the top ten criteria related to the entrepreneur's personality or experience, as indicated in Table 3. This table presents only the top ten of the in total 21 criteria that Carter & Van Auken (1994) tested.

Criteria	Mean	Rank
The entrepreneur's personality		
Honesty and integrity	1.11	10
Motivation and commitment	1.22	9
Physical and mental health	1.47	5
The entrepreneur's experience		
Experience in industry	1.28	8
Background	1.42	6
Handling of adversity	1.58	3
Leadership ability	1.61	2
Organizing management team	1.64	1
Characteristics of the market		
Potential	1.32	7
Characteristics of the product		
Marketability	1.50	4

Table 3: The ten highest rated criteria and results of early-stage ventures that Carter & Van Auken (1994) found on a five-point scale where a '1' indicated 'very important' and '5' indicated 'not important'. The rank of the mean score is also provided.

Muzyka et al. (1996) used a different methodology to identify the investment criteria that VCs use. Their study investigated pair wise trade-offs of 73 VCs in Europe to compute relative rankings of investment criteria. Muzyka et al. (1996) identified seven categories to group the criteria: 'Financial', 'Product-Market', 'Strategic-Competitive', 'Fund', 'Management team', 'Management competence', and 'Deal'. Muzyka et al. (1996) tested 35 criteria in total. The relative rankings of the criteria in the 'Management team' and 'Product-Market' category are presented in Table 4.

One should note that all the management team related criteria are ranked most important while the product-market criteria "appear to be only moderately important" (Muzyka et al., 1996, p. 281).

Criteria	Rank
Management team criteria	
Leadership potential of lead entrepreneur	1
Leadership potential of management team	2
Recognized industry expertise in team	3
Track record of lead entrepreneur	4
Track record of lead management team	5
Product-Market criteria	
Degree of product-market understanding	10
Uniqueness of product and technology	17
Market growth and attractiveness	18
Degree market already established	19
National location of business	27
Market size	29
Sensitivity to economic cycles	30
Seasonality of product-market	33

Table 4: Criteria and results that Muzyka et al. (1996) found with pair wise trade-offs.

Most studies group the criteria into similar categories. For instance, the six⁷ categories of MacMillan et al. (1985) (see Table 2) are slightly different to the seven categories that Muzyka et al. (1996) describe. Hall & Hofer (1993) use six, again slightly different, categories: ‘Venture capital firm requirements’, ‘Characteristics of the proposal’, ‘Characteristics of the entrepreneur/ team’, ‘Nature of the proposed business’, ‘Economic environment of proposed industry’, and ‘Strategy of the proposed business’.

One major finding of Zopounidis (1994, p. 63) with regard to past research was that “the criterion of the management team is considered predominant” across the studies.

2.2 Shortcomings of previous research

Nevertheless, the results from the studies mentioned in the previous section and from other available literature about VCs’ investment criteria are insufficiently useful to solve the research questions of this research. One should recall that one objective of this research is to provide relevant parties with *concrete* instead of *general* findings in the four chosen focus areas, that are presented in the right column of Table 5.

⁷ The categories ‘Entrepreneurs personality’ and ‘Entrepreneurs experience’ were combined in MacMillans’ study ‘Criteria Distinguishing Successful from Unsuccessful Ventures in the Venture Screening Process’ (MacMillan, Zemann, & Subba Narasimha, 1987) to the new category ‘Entrepreneurial team characteristics’.

Variables	Focus areas of this research
The industry of the venture	IT and Internet industry
The stage of the venture	Early-stage
The phase in the decision process	Due diligence phase
The country where the VC operates	The Netherlands, Singapore, and Sweden

Table 5: The focus areas of this research per variable (same as Table 1).

In section ‘1.2 Problem identification’, it was already pointed out that literature suggests that the evaluation process and (the importance of) investment criteria of VCs depend on a number of variables (amongst others): the *industry* of the venture, its *stage*, the *phase* in the decision process, and the *country* where the VC operates (see left column of Table 5). Researchers who study the investment criteria of VCs should be well aware of these variables and should make a focus area in each of these variables in order to come up with results that are scientifically valuable and relevant, and practically useful.

Shortcomings of previous literature are that the researchers did *not* make a distinct focus in their research population. As a result, the criteria that are widely recognized in the literature (e.g. the criteria that MacMillan et al. (1985) and Tyebjee & Bruno (1984) described) have produced “some *general* findings” (Muzyka et al., 1996, p. 274). For example, Fried & Hisrich (1994, p. 35) state that “[...] our purpose is to identify the *generic* criteria that all VCs use.” By not discriminating between industry focus or investment stage, several previous studies have assumed “a single hierarchy of decision criteria in all cases and across all VCs” (Muzyka et al., 1996, p. 274). As a result, the criteria found in previous literature are not specific enough for this research to be useful. Figure 1 aims to visualise this.

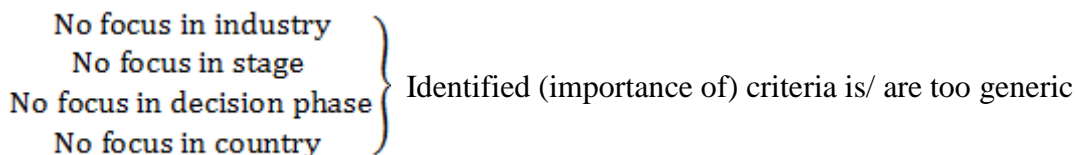


Figure 1: Shortcomings in available literature are concerned with a lack of focus.

All the researches that are discussed in the previous section have multiple shortcomings with regard to (the lack of) focus in the variables of the studies. An overview is presented in Table 6.

Study	Shortcomings (no focus in...)
MacMillan et al. (1985) and similar studies	Industry, stage, and decision phase
Carter & Van Auken (1994)	Industry and decision phase
Muzyka et al. (1996)	Stage, decision phase, and country

Table 6: Shortcomings of studies about the (importance of) investment criteria of VCs.

Besides having a lack of focus in their research population, the criteria that Carter & Van Auken (1994, p. 66) tested at VCs are also formulated in a too general manner (e.g. “Background”, “Life Cycle”, and “Potential”). The result is that these criteria are multi-interpretable by VCs which could also lead to biased results.

2.3 Contributions of this chapter to the research questions

This chapter has identified the conclusions of previous research that studied the investment criteria that VCs use when evaluating ventures. Furthermore, the shortcomings of these studies are discussed. Therefore, the first research question is solved in this chapter. It can be concluded that the importance of criteria found by previous research cannot be used to answer the research question of this chapter. The reason for this is that previous study did not apply a focus in either the industry of the venture, the stage of the venture, the phase in the decision process, or the country where the VC operates. As a result, conclusions of previous literature are based on generic findings, and do not match the objective of this research to provide relevant parties with results that are scientifically valuable and relevant, and practically useful.

It is striking that previous literature that is discussed in this chapter is old and perhaps even outdated. The most recent study about the investment criteria of VCs is from 2000. In the meanwhile, a lot of things have changed so it is reasonable to assume that the (practical) contributions of previous literature are not that relevant anymore. This also calls for a ‘refreshment’ of the data about the importance of investment criteria of VCs, as this research will do.

This chapter has also identified the methods of previous studies. Some methods are also useful for this research and will therefore be (partially) copied in the research design of this study. The result is presented in the next chapter.

3. Research design

This chapter will present the research design that is partially based on the findings of the previous chapter, where the methods of previous research were described. First, the overall methodology framework will be discussed. Then, the three key elements of the methodology will be presented in the data collection section. The analysis methods of the data are discussed thereafter. Finally, this chapter will end with the limitations of this research.

3.1 Methodology framework

The methods that have been chosen to eventually be able to answer the research questions and achieve the research objectives⁸ consist of three key elements: (1) a preliminary questionnaire, (2) a semi-structured interview, and (3) a final questionnaire afterwards. The objectives of this three-step methodology are:

- to get more background information about the VCs and the venture capital investments (by preliminary questionnaire and interview);
- to select the VCs that fit in the research scope (by preliminary questionnaire);
- to find (new) investment criteria that VCs use in practice (by preliminary questionnaire and interview);
- to find real life cases where VCs had to decide whether to invest or not (by interview);
- to quantify the (relative) importance of (categories of) investment criteria (by final questionnaire).

The three-step methodology is the most suitable manner to achieve these methodology objectives, where each step contributes to the objectives. It would not be practical to combine all three steps into one step – i.e. one interaction moment with the VCs – because the preliminary questionnaire should be filled in *before* the interview takes place, to ensure that only the VCs that fit into the research scope are interviewed. The interviews should be conducted *before* the final questionnaire in order to first gather and identify all the criteria and list them properly before returning them back to the VCs to complete the final questionnaire. In this chapter the three steps are further explained.

⁸ The objective of this research is to get qualitative as well as quantitative information about how VCs evaluate new venture proposals, what investment criteria they use, how important these investment criteria are, and how they decide to reject proposals (see section ‘1.3.2 Research objectives’).

The research population, as defined in section ‘1.4 Problem statement and research questions’, has been selected from the lists in the Singapore Venture Capital Association directory 2009-2010 (SVCA, 2009), the ‘Media Entrepreneur’s Guide to Singapore’ (Expara, 2010), the online Swedish Private Equity & Venture Capital Association directory (SVCA), and the online Nederlandse Vereniging van Participatiemaatschappijen directory (NVP). As these directories do not include *all* (relevant) VCs, the list is completed by additional desk research and referrals from other (interviewed) VCs, entrepreneurs or business incubators. This resulted in a total potential research population of 30 VCs in Singapore, 22 in Sweden, and 20 in the Netherlands.

Both the preliminary and the final questionnaire were pre-tested with one VC and one entrepreneurial finance specialist, and this resulted in some slight adjustments of the questionnaires. One VC was interviewed before the research to test the questions and duration of the interview. During the interviews with VCs it was checked whether the respondent had problems comprehending the preliminary questionnaire. No problems were mentioned. A larger pilot study was not conducted, partly because of the already small size of the population. Also, because the final questionnaire had already been utilized by other scholars for their research with VCs it was considered that serious problems were not likely to occur.

In order to have the full cooperation of the VCs and to gain reliable results a confidentiality agreement was available upon request. All the answers in both questionnaires and interviews were promised to be kept confidential.

For nonparticipants within the potential research population, the dominant reason for refusing to participate in this research was the busy schedule of the VCs and holiday absence. Unlike Tyebjee & Bruno (1984, p. 1022), who experienced that the sensitivity of the information requested was the major reason for refusing to participate of their research population, this was named only three times in this research.

The interviews have been conducted between May and September 2010.

3.2 Data collection

3.2.1 Step 1: Preliminary questionnaire

The goal of the preliminary questionnaire is twofold: first, to get more background information (size of the funds, typical deal size etc.) about the VCs. Also, this information has been used to identify VCs that did not fit in the research scope (i.e. no early-stage or IT and Internet investments) and eliminate them from further research (step 2 and 3).

The second goal of the preliminary questionnaire is to generate a list of criteria that the VCs use in the due diligence phase. These criteria can be both product and market related investment criteria and other investment criteria (e.g. entrepreneurial team related) and might include ‘new’ product and market related criteria that can be added to a list. This list with criteria is further explained in step 2 and 3. By asking for about ten criteria, the VCs are more likely to fill in the criteria they most often use. Such open-ended questions provide a basis for judging the actual attitudes and values of the respondents, which may not be obvious with structured questions.

The preliminary questionnaire was designed in a way that it would cover the most essential information about VCs. The questionnaire was short and concise in order to reduce the time investment of VCs to fill in all the answers and therefore to increase the response rate. The preliminary questionnaire is presented in ‘Appendix III: Preliminary questionnaire’.

If the preliminary questionnaire was not completed and returned before the interview, the questions of the preliminary questionnaire were discussed during the interview. In this case the first and the second step were combined.

3.2.2 Step 2: Semi-structured interviews

The second interaction with VCs was a semi-structured interview with a focus on market and product related investment criteria. After an introduction of both the interviewer, the interviewee, the research, and the scope of the interview (early-stage IT and Internet ventures and decision making in the due diligence phase) the first questions zoomed in at the selection process of the VC – thus the process from deal flow to decision whether to invest or not (see p. 72). Hereafter, the focus of the questions was on the investment decision: how does the VC make the decision to invest or not invest in a venture? Answers to these questions contribute to the general understandings of the investment process of the interviewed VCs.

The following questions focused on the main research topic; the product and market related investment criteria that VCs use when evaluating new venture proposals. The list of criteria provided by the VCs in the preliminary questionnaire was often used as a starting point for these questions. With the additional criteria that the VCs mentioned during the interviews, a list has been created that has been used for the final questionnaire. This list with product and market related criteria is also the answer to the second research question (see p. 6).

Besides identifying product and market related investment criteria and elaborating upon these criteria, real life cases were asked in which these criteria were of important influence for the decision (not) to invest in the venture. These cases demonstrate how the criteria have been applied in practice or how VCs would like the venture to correspond to the criteria. The case studies are further explained in section '3.3.3 Case study analysis' and '4.5 Case studies'.

The final question aimed at gaining names and contact information of other VCs to interview as well. Referral has proven to be a powerful tool in getting access to VCs. Another reason to do the interviews with VCs is to increase the response rate of the final questionnaire.

The total number of interviews conducted is 41 (14 in Singapore, 13 in Sweden, and 14 in the Netherlands). With a coherent domain like investment criteria of VCs, "usually 20 to 30 respondents are sufficient to get a complete picture" using this free listing technique (Weller & Romney, 1988, p. 14).

3.2.3 Step 3: Final questionnaire

The third element of the research was a final questionnaire that was sent to VCs after all interviews have been done. The purpose of this questionnaire is to quantify the (relative) importance of product and market related investment criteria for VCs when evaluating new venture proposals. With this information, the third and fourth research question can be solved. The questionnaire consisted of two parts.

First, all the product and market related investment criteria that have been identified in the preliminary questionnaires and during the interviews as well as in previous literature (e.g. Tyebjee & Bruno, 1984, p. 1058; Rah, Jung, & Lee, 1994, p. 517; Muzyka et al., 1996, p. 277; Zacharakis & Meyer, 2000, p. 327; Khanin, Baum, Mahto, & Heller, 2008, pp. 188-190) have

been brought together into a list. Some criteria were (in consultation with an entrepreneurial finance expert and a business development professional) eliminated from this list because they were – at second glance – not product or market related (e.g. entrepreneur understands the market), too specific (e.g. relevance for the country's welfare), could better be classified as criteria from another phase (e.g. the screening phase) of the decision process, or not relevant for entrepreneurs (e.g. sufficient human resources available to take the board seat in the investee company). This resulted in a total number of 19 product and 44 market related criteria.

In order to measure the importance scores of the product and market related criteria relative to other investment criteria (e.g. entrepreneurial team and financial related criteria) the remaining 63 product and market related investment criteria are added to the set of criteria that MacMillan et al. (1985, p. 121)⁹ found. This is done in order to avoid the formulation of an isolated view about the investment criteria that VCs use, as explained in section '1.4 Problem statement and research questions'. The above mentioned product and market related criteria replace the product and market related criteria of MacMillan et al (1985). This results in a set of in total 76 criteria, categorized in four groups ('entrepreneurial team characteristics', 'product characteristics', 'market characteristics', and 'financial considerations'¹⁰). The assumptions hereby are that MacMillan's criteria that relate to the entrepreneurial team and financial considerations are complete and represent the most important entrepreneurial team related and financial related investment criteria of VCs that invest in early-stage ventures in the IT and Internet industry. The 76 investment criteria have been included in the final questionnaire (see 'Appendix IV: Final questionnaire') that was sent to the VCs.

The reason to copy the criteria of MacMillan et al. (1985) in the categories 'Entrepreneurial team' and 'Financial considerations'¹¹ is to avoid spending too much time and efforts in finding and defining/ formulating criteria that are not within the primary research scope of

⁹ Two criteria of MacMillan et al. (1985) in the category 'Financial considerations' ('I will not be expected to make subsequent investments' and 'I will not participate in latter rounds of investment (requires my participation in the initial round of investment)') are removed from the list in this study because they are considered not distinguishing for VCs that invest in early-stage ventures (because early-stage VCs always expect to make subsequent investments and always participate in the initial round of investment).

¹⁰ Group VI, those criteria that had to do with the composition of the venture team, cannot be quantified by VCs and is not mentioned in later studies of MacMillan. Therefore 'Venture team' related criteria will not be part of this questionnaire.

¹¹ As explained in remark 9 the financial criteria 'I will not be expected to make subsequent investments' & 'I will not participate in latter rounds of investment (requires my participation in the initial round of investment)' are removed from the list in this study.

this study. The study of MacMillan et al. (1985) is specifically chosen as a direct frame of reference for this research because this study and criteria formed a basis for several later studies. Besides that, many of the criteria of MacMillan et al. (1985) in the categories ‘Entrepreneurial team’ and ‘Financial considerations’ are quite similar to the criteria found by other scholars. However, MacMillan’s formulation of the criteria is different from other scholars in that the criteria of the former include a value so that they are more likely to be interpreted in one way only. This leaves room for including two opposite criteria (e.g. ‘the product has a disruptive innovation’ and ‘the product has an evolving innovation’) that were both mentioned in the interviews with VCs.

Although conjoint analysis might reduce the bias of evaluating the proposal by the criteria one by one, it is opted to use a Likert scale to measure the importance of individual investment criteria. Because the research goal is to find the *concrete* criteria that VCs use, the total list of criteria found is large. Conjoint analysis, where VCs are asked to rate the criteria pair wise for numerous combinations of pairs, will demand a high time investment of VCs. This will eventually reduce the response rate and diminish the statistical base of this study.

VCs were asked to describe their general perceptions on the importance of evaluation criteria using a five-point Likert scale, where 1 means irrelevant and 5 means essential. This is based on the five-point scale of Rah et al. (1994) and Carter & Van Auken (1994) and is different than the four-point scale of MacMillan et al. (1985). The reason to choose for a five-point scale is to get a broader ‘importance’ distribution while each advance up the scale still represents “a distinct and clear increase in the importance of the criterion” (MacMillan et al., 1985, p. 120). The definitions of the points ‘1’ to ‘5’ appear in Table 7.

Points	Definition
1	Irrelevant – Not a factor in the decision-making process
2	Unimportant – Of little influence in the decision-making process
3	Desirable – A factor which improves the likelihood of investment
4	Important – A factor which must be present in order for an investment to take place, unless other factors specifically compensate for this factor's absence
5	Essential – A factor which must be present under any circumstances in order for an investment to take place

Table 7: Five-point weighting system (source: MacMillan et al. (1985) and Ray et al. (1994)).

The second part of the questionnaire aimed to identify the importance of the *categories* of criteria. VCs were asked to assign weights to the categories in such a way that the sum of the weights would be 100. This method is very useful not only to see how important VCs find the categories, but also how *more* important they find them.

Unlike the questionnaire that MacMillan et al. (1985) used, this research did not include a question where respondents were asked to list any additional criteria that they considered to be important. MacMillan et al. only found five additional criteria, what they took as evidence that “the additional criteria suggested were not widely used” (1985, p. 120). Another reason for this could be that many VCs will not take enough time to think about new criteria when filling in an interview. Therefore in this research the generating of new criteria was done in the preliminary questionnaires and interviews. The total final questionnaire is presented in ‘Appendix IV: Final questionnaire’¹².

A total number of 30 questionnaires in Singapore, 23 in Sweden, and 17 in the Netherlands was sent out and respectively 11, 10, and 12 responses were received.

3.3 Data analysis

3.3.1 Importance of investment criteria

The responses of the VCs in the final questionnaire have been analysed per country. First, the importance ratings of the investment criteria have been investigated. For each criterion the mean score is calculated as well as the standard deviation as a measurement of the consensus amongst the VCs. In the same way the responses of the last question¹³ of the final questionnaire are analysed, to find out more about how VCs rate the importance of *categories* of criteria.

To test for consistency in the responses of the VCs, the mean value of the assigned weights to the categories of criteria is compared to the average scores of all the criteria in one category. After all, it seems logical that a VC that rates a lot of market related criteria very high, also assign a lot of weight to the market category. To test for coherence between the scores of the

¹² This is the questionnaire that is sent to VCs that already provided the background information that was asked in the preliminary questionnaire. Otherwise, the questions of the preliminary questionnaire (except questions 3.4 about the investment criteria) were added to the final questionnaire.

¹³ “What category of criteria is most important to you?” See also ‘Appendix III: Preliminary questionnaire’.

criteria and the scores of the categories, a correlation analysis has been conducted. This is further explained in section '4.3 Importance of investment criteria'.

3.3.2 Essential criteria

The second part of the analysis of the findings is an assessment of essential venture characteristics in order to find the degree to which certain venture characteristics disqualify them for VCs. By counting the number of '5's (that is, 'essentials') per criterion, the rejection rate can be expressed as a percentage of the total sample¹⁴. The rating 'essential' means that the responding VC would reject the proposal regardless of any other characteristics, "no matter how redeeming" (MacMillan et al., 1985, p. 123).

This analysis is based on the assessment of MacMillan et al. (1985), where the ten investment criteria that were most frequently rated as 'essential' for the VC (that is, rated with a '5') are identified. This information can be used by entrepreneurs to see which part of the VCs would reject the venture proposals if they fail on one criterion.

The same analysis could be done for a combination of two (or more) criteria. The number of VCs is counted that rate at least one of the two criteria with an 'essential' score.

In section '4.4 Essential criteria', the percentages of the VCs that would reject proposals on one and two criteria are presented.

3.3.3 Case study analysis

In order to find out how VCs actually use the investment criteria in real life, some case studies have been done regarding ventures that approached a VC for venture capital funding. In this research it is not opted to draw one general comprehensive conclusion about the cases, but instead it aims to give more insight into the reason why some venture do get venture capital funding whereas others do not, by presenting these individual cases.

The case studies have been identified in the interviews with the VCs. A selection has been made to include the cases where entrepreneurs can learn from the most and that provide new insights in the way selection criteria have been used. The case study that was presented in the

¹⁴ Rejection rate is the number of VCs that reject a proposal, expressed as a percentage of the sample size. More mathematically, the rejection rate of criterion i is $n_i/N * 100\%$, where n_i is the number of '5' for criterion i , and N is the number of VCs that rated that criterion.

introduction is an example of this. The other cases are presented in ‘Appendix VIII: Case studies’.

3.4 Limitations

This section explains both the general pitfalls in researching VC’s investment criteria and the limitations that apply to this research.

3.4.1 General pitfalls in researching VCs’ investment criteria

It is important to realise that there are some pitfalls in researching investment criteria of VCs. Those pitfalls could influence the results in a negative way.

The VCs could for example bias the study in favour of the results obtained. MacMillan et al. (1985, p. 122) also recognise this: “It is possible that respondents could be influenced by their perception of what is a desirable response or a response that is seen as appropriate to their position as representatives of the venture capital community, rather than the criteria they actually use.”

In addition, it is noted that some VCs use a set of interrelated investment criteria. In that case a new venture proposal is evaluated by a combination of several criteria instead of evaluating the proposal by the criteria one by one. Asking the VCs to rate the investment criteria individually might bias the results. Riquelme & Rickards (1992) suggest the use of conjoint analysis to diminish this bias. Conjoint analysis uses multidimensional scales to determine the relative importance of certain attributes (in this case investment criteria). For instance, a respondent is asked to determine for a list of objects which of two objects is more desirable. This results in “the relative ranking of factors through a series of comparisons of such objects” (Muzyka et al., 1996, p. 276).

It could also be possible that investment criteria change over time or even on a daily basis. Both business related events and seemingly unrelated external events could influence the (importance of) investment criteria used. An example of a business related event is when a fund’s investment period (usually around five years) is almost closed. VCs might relax their criteria a little in order to invest in a venture that would not have received the funding if the fund’s ‘time-to-maturity’ was different. VCs might also adjust their criteria if they have no or little ‘success stories’ among their investee ventures. An example of a seemingly unrelated external event could be anything from a natural disaster to family circumstances. It should be

made clear by now that research about VCs' investment criteria is a static snapshot in a dynamic environment. It is important to realise this before drawing firm, unequivocal conclusions.

Finally, VCs could apply the investment criteria inconsistently to proposals, by adjusting the criteria to the characteristics of both the VC and the proposed deal.

The methodology for this research is chosen in such a way that it reduces the mentioned possible biases as much as possible within the constraints of time and money. For example, in order to reduce the “desirable response” bias, the data appears anonymous and cannot be traced to the VC. A second example is the reduction of the “interrelated criteria set” by comparing a VC's responses per criterion with the VC's responses per category, and therefore testing it for consistency. Other mentioned pitfalls are harder to optimise. At least this research recognises the possible existence of these biases.

3.4.2 Research specific limitations

The methodology of this research described in this chapter has some inherent limitations. One limitation is that the final questionnaire – the most important element of this research – is a self-report study. The problem could be that the VCs' importance ratings (1 to 5) of the criteria do not correspond with how important they rate the criteria in reality. This could bias the results in two ways. First there is the retrospection problem. A combination of an *ex post facto* rationalization of the investment decision (Tyebjee & Bruno, 1984; Hall & Hofer, 1993) and a discrepancy between how VCs *think* they use the criteria and how VCs really *use* the criteria might cause biased results.

A general limitation of the Likert scale is that “there are inevitable differences in discrimination between what is considered important” (Muzyka et al., 1996, p. 275). This might also be influenced by differences in culture between the Netherlands, Singapore, and Sweden. For this research conjoint analysis is not chosen as technique, because it is assumed that the above mentioned discrimination argument of Muzyka et al. (1996) is less important with a five-point scale. Also, in this research a weighting system is used where all points (1 to 5) have been defined (see Table 7). The conjoint analysis itself has the limitation that it is perceived to be time consuming by the respondent, which might result in a lower response rate.

Another limitation is the relatively small sample size. This is logically caused by the research scope of this study; focus results in a smaller research population. Whereas MacMillan et al. (1985) had a sample size of 102 and Zutshi et al. (1999) of 31, this research has a sample size of in total 17 in Singapore, 13 in Sweden, and 16 in the Netherlands. A small sample size might result in larger variability and a lower statistical power than a large sample size. Also, the small sample size makes it statistically irresponsible to perform a factor analysis because, according to Arrindell & Van der Ende (1985), no sample should be less than 100 even though the number of variables is less than 20. Factor analysis could have been performed to explore underlying patterns in the responses of the VCs.

Given the above mentioned limitations, the results reported in this paper need to be interpreted with some caution.

3.5 Contributions of this chapter to the research questions

This chapter discussed the three-step methodology of this research; the preliminary questionnaire, the interview, and the final questionnaire. Besides these three data collection methods, also the data analysis methods have been presented. Some of the methods discussed in this chapter are based on previous literature (e.g. the (five-point) Likert scale and the essential criteria analysis).

With regard to the research questions, this chapter did not answer one. Instead, this chapter provided the basis for the next chapter, which will discuss the findings of this study.

4. Findings

The previous chapter has discussed the methods that have been used to collect and analyse the data of this study. This chapter will present the main findings. First of all, the sample characteristics will be discussed. This will give an overview of the VCs that have participated in this research. After this, the product and market related criteria that have been identified during the preliminary questionnaires and interviews will be presented. In section 4.3, the scores of these criteria as well as the scores of the criteria that do not relate to the product or market are presented. Subsequently, the rejection rates of criteria will be explained. Finally, these rejection rates will be applied to some real life cases to demonstrate the interpretation of the rejection rates.

4.1 Sample

In total 46 VCs have participated in this research, by being interviewed (and completing the preliminary questionnaire), by completing the final questionnaire, or both. The sample sizes are listed in Table 8.

	Singapore	Sweden	The Netherlands
Total research population	30	22	20
Interview (incl. preliminary questionnaire)	14 (46.7%)	13 (59.1%)	14 (70%)
Final questionnaire	11 (36.7%)	10 (45.5%)	12 (60%)
Total no. of unique participating VCs	17 (56.7%)	13 (59.1%)	16 (80%)

Table 8: Sample sizes and response rates.

The participating companies are listed in ‘Appendix V: Participating VCs’. Table 9 shows the most relevant characteristics of the sample.

Singapore has the smallest portfolio size - money under investment control - with a mean of 27.1 million and a standard deviation of 44.3. Sweden appears to have the largest portfolio size with a mean of 147.3 million euro and a standard deviation of 128.8 despite the fact that VCs in the Netherlands has a wider range of portfolio size, ranging from 1.5 million – 1 billion euro. Although there is a significant difference in portfolio size, the difference in the average deal size in these three countries did not present that much difference. The average deal size ranges from 0.03 – 10 million euro while the means range from 1.4 – 2.6 million euro with a standard deviation smaller or equal to 2.

In terms of the number of cases which reach the due diligence phase, VCs operating in Singapore and in Sweden have a similar average of 18 and 19 respectively; almost double the number of cases processed by their counterparts in the Netherlands (10). When calculating the deal flow – due diligence ratio, one could see that approximately 12% (18/156) of the proposals that enter the selection process of the VCs operating in Singapore end up in the due diligence phase. In Sweden, this ratio is approximately 9% and in the Netherlands, only 3%. The (absolute and relative) smaller number of proposals reaching the due diligence phase in the Netherlands may be due to the relatively tougher elimination process practiced and/ or a lower quality of submitted venture proposals.

Almost all sample companies invest in ventures that are geographically not too far from the VC's office, mainly to be able to be quickly physical available at the entrepreneurial venture and because the VCs are more familiar with the local market. In Singapore, the geographical scope was (besides Singapore) South-East Asia and in some cases included India, China and Australia. The geographical scope of the Swedish VCs was mainly Sweden and to some extent the rest of Scandinavia (Norway, Denmark and Finland). Dutch VCs mainly invest in Dutch ventures.

Most VCs responded that they have a return on investment in mind (before they decide to invest) of 5 to 10 times. This multiplier is useful to get a rough understanding of the risk and return preferences of the VCs, but should be interpreted with some caution since no term sheets have been studied in this research to formally verify this number.

Answers of the VCs indicated that the selection process, as discussed on page 57, is different per VC. Some VCs have a 'milestone' approach where they have a go/ no go investment decision at certain set milestones (e.g. initial screening, presentation of the entrepreneur, term sheet negotiations). Other VCs have a more continuous decision process what makes it harder to allocate rejection to a specific phase. For this reason, it is assumed that the responses about the rejection rates in the preliminary questionnaire are not consistent for every VC and therefore unable to compare. Due to this, the rejection rate numbers are not further discussed in this paper.

Variable	Description	Singapore			Sweden			The Netherlands		
		Range	Mean	SD	Range	Mean	SD	Range	Mean	SD
Portfolio size	Money under investment control (in million euros) ^{a, b, c}	0.45 - 150	27.1	44.3	3 - 340	147.3	128.8	1.5 - 1.000	137.2	283.0
Average deal size	Amount (in million euros) ^{a, b, c}	0.03 - 7.5	1.8	1.3	0 - 10	2.6	1.7	0.05 - 10	1.4	2.0
Deal flow	Number of new proposals per month	25 - 400	156	134	75 - 400	206	117	50 - 1.000	299	296
Due diligence cases	Number per year	2 - 40	18	14	3 - 60	19	18	3 - 11	10	8
		Number of VCs (N = 17)			Number of VCs (N = 13)			Number of VCs (N = 16)		
Ownership	Independent private		12			11			13	
	Independent quoted		0			0			0	
	Bank related		0			1			0	
	Corporate		2			0			1	
	Government		3			1			1	
	University		0			0			1	
Strategic management style	Influence development business strategy		11			13			16	
	Autonomy for business		4			0			0	
	No planning documents		2			0			0	
Industry focus	Specialised in IT & Internet industry		7			7			7	
	Generalist, no industry focus		10			6			9	

Table 9: Overview of the sample. The ranges, means and standard deviations (SDs) of the first six variables in this table are based on the answers of the VCs and have not been formally checked.

^a Singapore dollar (S\$) is converted into euro by the ratio 1.00 S\$ = 0.55 euro

^b Swedish krona (SEK) is converted into euro by the ratio 1.00 SEK = 0.105 euro

^c U.S. dollar (US\$) is converted into euro by the ratio 1.00 US\$ = 0.75 euro

Most VCs are “active investors” which means that have a board seat in the entrepreneurial venture and are involved in strategic (and sometimes even operation) decision making. This can also be seen at the scores on the ‘strategic management style’.

The ranges, means and standard deviations (SDs) of the first six variables in this table are based on the answers of the VCs and have not been formally checked.

Now that the sample characteristics have been discussed, it is time to look at the results of the preliminary questionnaires, interviews, and final questionnaires.

4.2 Product and market related criteria

In section ‘3.2.3 Step 3: Final questionnaire’ it has been discussed that all the product and market related investment criteria that have been identified in the preliminary questionnaires and during the interviews as well as in previous have been brought together into a list. The result is a list with a total number of 19 product and 44 market related criteria. The criteria that are related to a combination of product and market (i.e. revenue model and value proposition) are listed in the market category. The list with the product and market related investment criteria appear in ‘Appendix VI: Product and market related criteria’. The second research question (“What product and market related investment criteria do VCs use when evaluating ventures?”) is herewith solved in this section.

The most important finding is that this study found an *additional* number of 14 product and 39 market related criteria compared to the number of product and market related criteria that MacMillan et al. (1985) found. Recall that this study is inspired by their study.

This large number of newly found criteria implies that there is probably a large number of additional criteria in the other categories of criteria (i.e. entrepreneur related or financial considerations) as well. The next section will discuss the importance of the investment criteria, including the 19 product and 44 market related criteria.

4.3 Importance of investment criteria

This section will present the main findings of this study; the importance of the investment criteria. Recall that the VCs rated the criteria on a 5-point scale, where ‘5’ means ‘essential’ and ‘1’ means ‘irrelevant’. First, the criteria that are rated important (for convenience, the criteria that scored higher than 3.75) are presented. Then the criteria that scored below 3.00 –

the unimportant criteria – are discussed. Subsequently, the scores of the categories of criteria are presented.

4.3.1 Investment criteria that score above 3.75

For each criterion the mean score is calculated as well as the standard deviation. The results appear in Table 10. Because of practical reasons, only the criteria that are rated greater than 3.75 in the Netherlands are presented in this table. The full overview of the importance of the investment criteria is presented in ‘Appendix VII: The importance of investment criteria’.

The standard deviation (average distance to the mean value) is useful to see if there exists a consensus amongst the VCs. A low standard deviation indicates a high consensus (data points are very close to the mean) and vice versa.

The five categories of criteria used by VCs in the Netherlands, Sweden, and Singapore when assessing business proposals are: (1) characteristics of product or service, (2) entrepreneur’s personality, (3) characteristics of market (4) financial considerations, and (5) entrepreneur’s experience. The categories are presented in the order of importance (represented by the mean scores, the highest being the first, the lowest as the last) as perceived by the VCs operating in the Netherlands. The criteria under each broad category are also listed in the same manner (so based on the order of the Netherlands). The overall mean scores for each of the five categories have also been calculated and presented in bold. This overall mean also takes into account criteria which were not sufficiently important (that is, < 3.75) to include in the table.

While VCs operating in the Netherlands, Singapore, and Sweden agree that the entrepreneur’s personality is an important parameter, only Singapore-based and Sweden-based VCs have ranked it as the top most important category of criteria (mean of 4.02 and 3.60 respectively). Their Dutch counterparts believe that the entrepreneur’s personality (mean of 3.68) is secondary to the characteristics of the product or service (mean of 3.69). Note that the importance (as measured by the mean) is almost the same between the first and second category for the VCs operating in the Netherlands. While VCs operating in Singapore view financial consideration as the second most important parameter (with a mean of 3.82), their European colleagues do not share the same view, placing it as the second least important parameter.

Categories/ Criteria	The Netherlands		Singapore		Sweden	
	Mean ↓	SD	Mean	SD	Mean	SD
Characteristics of the product or service	3.69		3.75		3.41	
The technology is scalable	4.67	0.49	4.64	0.50	3.90	0.74
The technology provides a sustainable competitive edge	4.25	0.75	4.45	0.52	4.40	0.84
The product solves a painful problem of a customer	4.25	0.62	4.00	0.63	4.00	0.67
The product has been developed to the point of a functioning prototype	4.17	0.83	3.55	1.29	3.60	1.26
The product is ready to market or has short time to market	4.08	1.00	3.55	1.04	3.90	0.88
The product performance is superior to competitors' products	4.08	0.79	3.82	0.75	3.60	0.70
The technology is proven and validated	3.83	0.83	3.45	1.04	3.30	0.48
The entrepreneur's personality	3.68		4.02		3.60	
Able to evaluate and react to risk well	4.25	0.62	4.27	0.65	4.00	0.47
Capable of sustained intense effort	4.17	0.72	4.45	0.52	4.10	0.74
Characteristics of the market (incl. value proposition and revenue model)	3.66		3.70		3.49	
The revenue model is scalable	4.83	0.39	4.55	0.52	3.89	0.78
The entrepreneur can demonstrate a market demand	4.67	0.65	4.27	0.79	4.22	0.44
The target market has a large growth potential	4.67	0.49	4.45	0.52	3.78	0.83
People will pay for the product	4.64	0.50	4.27	1.01	4.22	1.30
The venture has a large growth potential	4.58	0.51	4.45	0.69	4.22	0.67
The product has a strong value proposition for a specific target market	4.58	0.67	4.27	1.01	4.22	0.83
There is a large total available market	4.50	0.67	4.27	0.65	4.11	0.33
The revenue model adds value	4.45	0.52	4.09	0.70	3.67	1.22
The revenue model is attractive	4.42	0.51	4.45	0.52	4.11	0.78
The implied growth rate between the ventures' size today and in 3-5 years is realistic	4.33	0.49	4.00	0.89	4.22	0.67
The product is a 'must have' or 'need to have'	4.33	0.98	3.91	0.83	3.89	0.78
The product is scalable across geographies and has international potential	4.25	0.97	4.36	0.81	4.00	0.71
The revenue model is proven in small scale	4.08	0.67	3.36	1.03	3.78	0.83
An attractive position and/ or large potential market share can be claimed in the market	4.00	0.74	4.09	0.70	3.44	0.73
Customers are known and/ or there are already some customers	4.00	0.74	3.36	1.03	3.89	0.93
The venture is in an industry with which I am familiar	4.00	1.10	3.36	1.21	3.00	0.50
The value proposition is different from competitors	3.92	0.67	4.00	0.89	3.56	0.88
The target market is clear and can be defined	3.92	0.67	4.36	0.67	3.89	0.60
The venture is able to (know how to) defend their market in 2-3 years	3.83	0.39	4.09	0.70	3.78	0.67
The product has the competitive advantage to be no. 1 or 2 in the market	3.83	0.72	3.91	0.54	3.56	0.73
Financial considerations	3.56		3.82		3.37	
I require a return of ≥ 10 times my investment within 5-10 years	4.08	0.90	4.00	0.89	3.56	1.01
The entrepreneur's experience	3.45		3.48		3.20	
Thoroughly familiar with the market targeted by venture	4.50	0.52	4.45	0.69	3.90	0.88
Has a track record relevant to venture	3.83	0.94	3.27	0.79	3.20	1.03

Table 10: Importance of the investment criteria in the Netherlands, Singapore, and Sweden that score equal to or higher than 3.75 in the Netherlands.

If one looks more into the individual criteria, one would notice that the criterion that has the highest mean in the Netherlands is ‘the revenue model is scalable’ with a score of 4.83 on a five-point scale. VCs in the Netherlands reach a high level of consensus about these criteria; the standard deviation of 0.39 is relatively low compared to the standard deviations of other criteria. The same criterion is – besides the criterion ‘the technology is scalable’ with a mean of 4.64 – most important in the Singapore, with a mean score of 4.55. The standard deviation of 0.50 respectively 0.52 indicates the high level of consensus amongst the Singaporean VCs. In Sweden the criterion ‘the technology provides a sustainable competitive advantage’ scores the highest with a mean value of 4.40. However, the standard deviation of 0.84 is slightly above the average standard deviation (0.81) in Sweden and indicates that there is some disagreement between the VCs.

While a certain criterion may be of relative importance to VCs in a particular country (indicated by the relatively high mean score), the same criterion may not be regarded as important by all VCs in that same country as shown by the high standard deviation. For instance, the criterion ‘The product has been developed to the point of a functioning prototype’ is viewed as quite important in all three countries (all showing a mean of > 3.5). However, if one looks at the corresponding standard deviation (0.83, 1.29, and 1.26 in the Netherlands, Singapore, and Sweden respectively), it can be argued that the level of consensus amongst the VCs about the importance of this criterion is much lower in Singapore and Sweden than it is in the Netherlands.

In general, the means of the VCs in Singapore are similar to those in the Netherlands. The means in Sweden appear mostly lower than those in the other two countries.

It is interesting to see that of the seven product related criteria that score higher than 3.75, only one is suggested by MacMillan et al. (1985) (“The product has been developed to the point of a functioning prototype”). For the market related criteria, only two of the 20 criteria are suggested by MacMillan et al. (“The target market has a large growth potential”¹⁵ and “The venture is in an industry with which I am familiar”). The other six product related criteria and 18 market related criteria have been identified in this study by the preliminary questionnaire and interviews. This means that six of the 19 product related criteria and 18 of

¹⁵ MacMillan et al. (1985) defined this criterion as “The target market enjoys a significant growth rate”.

the 44 market related criteria that this study has identified are important with scores above 3.75. From this it can be concluded that this study added relevant investment criteria to literature. This is also an indicator that the list with criteria of MacMillan et al. (1985) was not complete. Future research can find new entrepreneur and financial related criteria using the same methodology as this study.

This section discussed the criteria that are rated important (higher than 3.75) by VCs. The next section focuses on the criteria that score lowest (below 3.00).

4.3.2 Investment criteria that score below 3.00

The criteria that VCs mentioned that did not score high are also interesting to take a closer look at. Table 11 presents the mean scores and standard deviation of the investment criteria that have a mean score below 3.00 in the Netherlands. Note that the format of this table is similar to Table 10.

Categories/ Criteria	The Netherlands		Singapore		Sweden	
	Mean ↓	SD	Mean	SD	Mean	SD
Characteristics of the product or service						
The product is consistent with corporate strategy of my company	2.83	0.83	3.18	1.25	2.60	1.07
The product or technology has IP protection	2.92	0.90	3.55	0.82	3.10	0.57
The entrepreneur's personality						
Has a personality compatible with mine	2.67	0.98	3.36	0.81	3.10	0.88
Characteristics of the market (incl. value proposition and revenue model)						
The product is different than the trend in the market	1.92	0.79	2.82	1.08	2.13	1.25
The venture will create a new market	2.33	0.78	2.91	0.70	2.38	0.92
The venture found a niche market	2.64	0.92	3.18	0.87	3.22	0.83
The venture will transform the market	2.75	0.62	3.27	0.79	2.50	1.20
The product is conform the trend in the market	2.83	1.11	3.00	0.94	2.63	0.92
The revenue model is proven internationally	2.83	0.72	2.91	0.70	3.11	0.93
There is little threat of competition during the first 2-3 years	2.83	0.39	3.09	1.04	2.89	0.78
The entrepreneur's experience						
I am already familiar with the entrepreneur's reputation	2.58	0.67	2.73	0.47	2.56	1.24
The entrepreneur was referred to me by a trustworthy source	2.83	1.03	3.09	0.94	2.90	1.20

Table 11: Importance of the investment criteria in the Netherlands, Singapore, and Sweden that score equal to or lower than 3.00.

In the Netherlands and Sweden, the criterion ‘The product is different than the trend in the market’ has the lowest score (1.92 and 2.13 respectively) and appears to be the least important criterion amongst the VCs. In Singapore only the criterion ‘I am already familiar with the

entrepreneur's reputation' scored lower (2.73 versus 2.82 for the former criterion). Striking is that the criterion 'The product or technology has IP protection' scores relatively low in all three countries. IP protection in the IT & Internet industry is thus not that important to a VC in the Netherlands, Singapore or Sweden. This is contradictory to the conventional wisdom that IP is very important.

It is interesting to see that the average standard deviation of the lower ranked criteria (Table 11) is smaller than the average standard deviation of the higher ranked criteria (Table 10) in all three countries. For example, in the Netherlands the average standard deviation of the criteria that are ranked larger than or equal to 3.75 is 0.69 while the average standard deviation of the criteria that are ranked lower than or equal to 3.00 is 0.81. This could be the result of the methodology of this research to include a criterion in the final questionnaire even when it is only mentioned once by a VCs. This is an indicator that one (or more) VCs find a criterion important while the other VCs do not agree with that. An example of this is the criterion 'The venture will transform the market', which has a standard deviation of 1.20 in Sweden. Closer examination of the responses of the Swedish VCs learns that only two VCs rated this criterion with a '4', while the rest of the VCs rated this criterion with only a '1', '2', or – in two cases – with a '3'.

One should note that the criteria that scored between 3.00 and 3.75 are not presented here. The full overview is presented in 'Appendix VII: The importance of investment criteria'.

This section discussed the criteria that are rated below 3.00, and therefore are considered unimportant. VCs were asked to rank not only the individual criteria that have been discussed so far, but also the categories of criteria. To illustrate, the category 'Characteristics of the product or service' consists of the 19 product related criteria. The next section looks at these five categories of criteria.

4.3.3 Scores of the categories of criteria

Besides rating the individual criteria, VCs were asked to rank the categories of criteria as well in the final questionnaire. The mean value and the standard deviation of the assigned weights to the categories of criteria is calculated in the same manner as was done for Table 10 and Table 11. The results appear in the 'Mean' and 'SD' columns in Table 12.

Categories of criteria	The Netherlands			Singapore			Sweden		
	Mean ↓	SD	Aver.	Mean	SD	Aver.	Mean	SD	Aver.
The entrepreneur's personality	22.33	7.38	3.68	22.27	6.07	4.02	24.67	17.60	3.60
Financial considerations	21.00	4.39	3.56	19.55	11.28	3.82	22.22	12.77	3.37
Characteristics of the market (incl. value proposition and revenue model)	19.42	5.84	3.66	22.73	6.07	3.70	21.67	11.18	3.49
Characteristics of the product or service	18.67	6.91	3.69	20.91	8.31	3.75	17.78	6.18	3.41
The entrepreneur's experience	18.58	3.75	3.45	14.55	7.89	3.48	13.67	7.57	3.20
Sum	100			100			100		

Table 12: Importance of categories of investment criteria in the Netherlands, Singapore, and Sweden.

The column ‘Aver.’ presents (in bold) the average values that have been calculated in Table 10. These values represent the average scores of all the individual criteria per category.

It appears that the VCs in Singapore find market related investment criteria overall the most important, closely followed by the entrepreneur’s personality related criteria. In Sweden and the Netherlands, the category with entrepreneur’s personality related criteria scores the highest, followed by the market and financial related criteria. The criteria that relate to the entrepreneur’s experience are overall rated the least important in all three countries.

To test for consistency in the responses of the VCs, the mean value of the assigned weights to the categories of criteria of Table 12 is compared to the average scores of all the criteria in one category (the bold values in Table 12). The latter average scores have been presented in Table 10 as well. Recall that these average scores are based on the scores of the entire set of criteria, and not only on the scores of the criteria that appear in Table 10 (higher than 3.75).

To illustrate the consistency test, the VCs in Singapore assign an average weight of 20.91 to the product category and the average value of the mean values of all criteria in the product category is 3.75. The correlation of the assigned weights to the categories and the rated criteria is in Singapore 0.78, which is significant at 0.05 significance level. In other word, the responses of the VCs in Singapore per criterion are consistent with the weights that they have assigned to the categories of criteria. Table 13 shows the mean values of the responses of the VCs in Singapore as an example of a consistency test.

Categories of criteria	Mean ↓	Average of category's means	Correlation
Characteristics of the market (incl. value proposition and revenue model)	22.73	3.70	0.75
The entrepreneur's personality	22.27	4.02	
Characteristics of the product or service	20.91	3.75	
Financial considerations	19.55	3.82	
The entrepreneur's experience	14.55	3.47	

Table 13: Consistency check for the responses of the Singaporean VCs.

In similar manner, the correlation is calculated for the Netherlands and Sweden. In Sweden, the correlation is also significant (0.88), which indicates consistency. In the Netherlands, however, the correlation is 0.30 which is not significant at 0.05 level. Apparently, Dutch VCs are less consistent in their responses than Singaporean and Swedish VCs. The individual criteria are more detailed than the categories of criteria and therefore the scores on individual criteria are expected to be more accurate. For that reason, the mean value of the assigned weights to the categories of criteria of the VCs in the Netherlands are considered to be less useful for further research and should be interpreted with some caution. Further research will therefore be done with the scores of the individual criteria.

The main findings of this section are that on category level VCs in the Netherlands and Sweden find the category ‘The entrepreneur’s personality’ most important. Singaporean VCs find the category ‘Characteristics of the market’ slightly more important than ‘The entrepreneur’s personality’. In all three countries, the VCs value the category ‘The entrepreneur’s experience’ lowest. These scores are reasonably consistent with the scores of all the individual criteria of the VCs in Singapore and Sweden that have been presented in Table 10 and in Table 12 in bold. However, based on the average scores of all individual criteria it was expected that the Dutch VCs would value the category ‘Characteristics of the product or service’ highest (see the bold values in Table 10), but – as can be seen in the left column of Table 12 – the VCs in the Netherlands valued the categories ‘The entrepreneur’s personality’, ‘Financial considerations’, and ‘Characteristics of the market’ higher.

4.3.4 Main findings of section 4.3

The main findings of section 4.3 are presented in Table 14 and Table 15. Table 14 shows the criteria that have the highest mean score per country, and is therefore a differently stated summary of Table 10.

Rank	The Netherlands		Singapore		Sweden	
	Criterion	Mean	Criterion	Mean	Criterion	Mean
1	The revenue model is scalable	4.83	The technology is scalable	4.64	The technology provides a sustainable competitive edge	4.40
2	The technology is scalable	4.67	The revenue model is scalable	4.55	People will pay for the product	4.22
3	The entrepreneur can demonstrate a market demand	4.67	The technology provides a sustainable competitive edge	4.45	The venture has a large growth potential	4.22
4	The target market has a large growth potential	4.67	Capable of sustained intense effort	4.45	The product has a strong value proposition for a specific target market	4.22
5	People will pay for the product	4.64	The target market has a large growth potential	4.45	The implied growth rate between the ventures' size today and in 3-5 years is realistic	4.22

Table 14: Main findings: The top five criteria with regard to the importance of criteria higher than 3.75.

Table 15 shows the criteria that have the lowest mean score per country. Therefore this table is a differently stated summary of Table 11.

Rank	The Netherlands		Singapore		Sweden	
	Criterion	Mean	Criterion	Mean	Criterion	Mean
76	The product is different than the trend in the market	1.92	I am already familiar with the entrepreneur's reputation	2.73	The product is different than the trend in the market	2.13
75	The venture will create a new market	2.33	The product is different than the trend in the market	2.82	The venture will create a new market	2.38
74	I am already familiar with the entrepreneur's reputation	2.58	The venture will create a new market	2.91	The venture will transform the market	2.50
73	The venture found a niche market	2.64	The revenue model is proven internationally	2.91	I am already familiar with the entrepreneur's reputation	2.56
72	Has a personality compatible with mine	2.67	The product is conform the trend in the market	3.00	The product is consistent with corporate strategy of my company	2.60

Table 15: Main findings: The top five criteria with regard to the importance of criteria below 3.00.

With regard to the categories of criteria, the main findings are presented in Table 16. This table is a differently stated summary of Table 12. Note that the first three categories in the Netherlands almost have the same mean. All three countries find the category 'The entrepreneur's experience' the least important.

Rank	The Netherlands		Singapore		Sweden	
	Category	Mean	Category	Mean	Category	Mean
1	Characteristics of the product or service	3.69	The entrepreneur's personality	4.02	The entrepreneur's personality	3.60
2	The entrepreneur's personality	3.68	Financial considerations	3.82	Characteristics of the market	3.49
3	Characteristics of the market	3.66	Characteristics of the product or service	3.75	Characteristics of the product or service	3.41
4	Financial considerations	3.56	Characteristics of the market	3.70	Financial considerations	3.37
5	The entrepreneur's experience	3.45	The entrepreneur's experience	3.48	The entrepreneur's experience	3.20

Table 16: Main findings: The ranks of the categories of criteria.

Section 4.4 has quantified the importance of the investment criteria and the overall categories of criteria. Overall, the entrepreneur's personality category scores high in all three countries, and even highest in the Netherlands and Sweden. With regard to the individual criteria, VCs in the Netherlands and Singapore find it most important that a venture has a scalable revenue model and technology. In Sweden, VC find it more important that the technology of the venture provides a sustainable competitive edge and that people will pay for the product. The criterion 'the product is different than the trend in the market' is unimportant in all three countries and ranks even lowest in the Netherlands and Sweden. VCs in the three countries achieve a high level of consensus about the other criteria that rank low.

In Singapore, six product or market related criteria score equal to or higher than the highest score of the entrepreneurial criteria in that country. In Sweden and the Netherlands this number is even higher (eight).

4.4 Essential criteria

What criteria contribute most to the decision of a VC to invest in the venture? The previous section has identified the importance of the criteria that VCs use when evaluating venture proposals, and has therefore answered this question. The most important (score above 3.75) and the least important (score below 3.00) criteria have been presented, as well as the overall scores of the categories of criteria. This section looks at the rejection rates; what criteria contribute most to the rejection of venture proposals?

4.4.1 Rejection rate based on one criterion

The ten most essential rated criteria by VCs in the Netherlands, Singapore, and Sweden are presented in Table 17. Recall that the percentage is calculated by counting the number of VCs that reject a proposal if the venture does not pass a specific criterion. This method is based on the analysis of the criteria that are essential to VCs. In other words, if a venture fails on a criterion that is essential to a VC, then the VC will reject this proposal (see section ‘3.3.2 Essential criteria’). The rejection rates are sorted based on the essential criteria in the Netherlands.

Amongst these criteria no single criterion relates to the entrepreneur (‘the entrepreneur can demonstrate a market demand’ falls within the market category). Also, none of these ten essential criteria relate to the financial considerations. Only one essential criterion (‘the technology is scalable’) relates to the product category. The other nine essential criteria relate to the market.

Criterion	Rejection rate		
	The Netherlands ↓	Singapore	Sweden
The revenue model is scalable	83%	55%	22%
The entrepreneur can demonstrate a market demand	75%	45%	22%
The technology is scalable	67%	64%	20%
The target market has a large growth potential	67%	45%	11%
The product has a strong value proposition for a specific target market	67%	55%	44%
People will pay for the product	64%	55%	56%
The product is a 'must to have' or 'need to have'	58%	27%	11%
The venture has a large growth potential	58%	55%	33%
There is a large total available market	58%	36%	11%
The product is scalable across geographies and has international potential	50%	55%	22%

Table 17: Percentage of VCs that would reject proposals which fail on one criterion.

One can see that overall the Swedish VCs have a lower rejection rate with regard to proposals which fail on one criterion. In the Netherlands, the percentage of VCs that would reject proposals which fail on the criterion ‘the revenue model is scalable’ is 83%. This means that there is only ‘audience’ of 17% of the early-stage IT and Internet VCs in the Netherlands that do not reject the proposal immediately for ventures that lack a scalable technology. The audience of these ventures in Singapore is 45% and in Sweden 78%.

From Table 17 it can be concluded that VCs operating in Sweden emerge as the most tolerant as they demonstrate a relatively lower rejection rate, nearly across the board whereas the toughest VCs seem to be in the Netherlands.

4.4.2 Rejection rate based on a combination of two criteria

The same analysis could be done for a combination of two (or more) characteristics. The results of the ten pairs of criteria with the highest rejection rate in the Netherlands appear in Table 18.

The results in Table 18 could be interpreted as the proposals that would be rejected by a significant majority of venture capitalists if they had only two flaws. For example, if a certain venture lacks a scalable revenue model *and* cannot demonstrate a market demand then the proposal would be rejected by *all* participating VCs in the Netherlands. In Singapore, this number is 64% and in Sweden only 30%.

Criteria	Rejection rate		
	The Netherlands ↓	Singapore	Sweden
The revenue model is scalable The entrepreneur can demonstrate a market demand	100%	64%	30%
The revenue model is scalable People will pay for the product	100%	73%	60%
The revenue model is scalable The technology is scalable	92%	73%	30%
The revenue model is scalable The target market has a large growth potential	92%	64%	20%
The revenue model is scalable The product has a strong value proposition for a specific target market	92%	73%	50%
The entrepreneur can demonstrate a market demand The technology is scalable	92%	64%	20%
The entrepreneur can demonstrate a market demand The target market has a large growth potential	92%	73%	20%
The technology is scalable People will pay for the product	92%	82%	70%
The entrepreneur can demonstrate a market demand The product has a strong value proposition for a specific target market	83%	73%	40%
The entrepreneur can demonstrate a market demand People will pay for the product	83%	64%	70%

Table 18: Percentage of VCs that would reject proposals which fail on two criteria.

One can see that ‘the revenue model is scalable’ appears in five of the ten criteria and therefore potentially contributes a lot to the rejection of venture proposals by VCs.

Entrepreneurs that lack (amongst others) a scalable revenue model should be well aware of the fact that their proposal is very likely to be rejected, especially in the Netherlands and Singapore. Similar to Table 17, an entrepreneur that lacks a combination of criteria has the highest chance of not immediately being rejected in Sweden.

4.4.3 Zero percent rejection rate criteria

When looking at the criteria that are not rated ‘essential’ by *any* of the VCs (in the Netherlands), Table 19, could be constructed. The corresponding rejection rates of the Singaporean and Swedish VCs also appear in the table.

Criterion	Rejection rate		
	The Netherlands	Singapore	Sweden
Attends to detail	0%	0%	0%
Has a personality compatible with mine	0%	9%	0%
The entrepreneur was referred to me by a trustworthy source	0%	9%	0%
I am already familiar with the entrepreneur’s reputation	0%	0%	0%
A strategy is available to protect the products uniqueness	0%	55%	0%
The product is difficult to copy	0%	27%	0%
The product is consistent with corporate strategy of my company	0%	18%	0%
The product is resistant to economic cycles	0%	0%	0%
The venture is in a dynamic, disruptive market with attractive patterns	0%	9%	0%
The total available market can be benchmarked for an accurate prediction of the size	0%	0%	0%
The venture is able to (know how to) defend their market in 2-3 years	0%	27%	11%
There is little threat of competition during the first 2-3 years	0%	9%	0%
The venture can use its customer’s international network to enter new markets	0%	9%	0%
(Uncertain) political factors do/ will not interfere the market	0%	0%	11%
The venture enjoys a first mover advantage	0%	0%	0%
The venture choose the most attractive position in the value chain	0%	0%	11%
The venture found a niche market	0%	9%	0%
The product is different than the trend in the market	0%	0%	0%
The product is conform the trend in the market	0%	0%	0%
The venture will create a new market	0%	0%	0%
The venture will transform the market	0%	9%	0%
The revenue model is proven internationally	0%	0%	11%

Table 19: Criteria with a rejection rate of 0% in the Netherlands.

A total number of 22 criteria do not score a single ‘5’ in the Netherlands. A lot of these criteria also have a zero percent rejection rate in Singapore and Sweden. A remarkable thing is that the criterion ‘A strategy is available to protect the products uniqueness’ has a zero percent rejection rate in the Netherlands and Sweden, but has a rejection rate of as high as 55% in Singapore. Singaporean VCs rate this criterion with a mean score of 4.45, while the

Dutch and Swedish VCs rate it with 3.42 and 3.50 respectively. Thus, VCs in Singapore find it on average more important that a venture has a strategy to protect the products uniqueness than in the other two countries, and 55% of the Singaporean VCs even find it essential. A possible explanation could perhaps best be described by the quote of one VC in Singapore: “We do not care that much about IP protection because in China they will copy it anyway. It is more important to protect the unique features of a product or technology in a more sophisticated manner”.

The top four presented criteria in Table 19 relate to the entrepreneur. This implies that 40% of the ten entrepreneur related criteria are not perceived to be essential by the Dutch VCs. Similar allegations could be made for the VCs in Sweden and Singapore. When looking further into the responses, 50% of the entrepreneur related criteria are not essential to any of the Swedish VCs. In Singapore, it could be seen in the response data that *three* entrepreneur related criteria (so 30%) are not perceived to be essential by any of the Singaporean VCs.¹⁶ In addition, only 20% of the entrepreneur related criteria (namely ‘Has a personality compatible with mine’ and ‘The entrepreneur was referred to me by a trustworthy source’) are rated ‘essential’ by *one* VC (9%), as could also be seen in Table 19.

4.4.4 Main findings of section 4.4

Section 4.4 has identified the criteria that contribute most to the decision of the VC to reject a proposal. First, the rejection rates based on a single criterion have been discussed. The individual criteria that have the highest rejection rate are ‘the revenue model is scalable’ (the Netherlands), ‘the technology is scalable’ (Singapore), and ‘people will pay for the product’ (Sweden). Subsequently, the same analysis based on two criteria have been presented in order to calculate the rejection rate of ventures that lack a combination of characteristics. The scalable revenue model is also present in a lot of combinations of criteria with the highest rejection rates. These scores provide insight in the rejection rates of venture proposals that lack two criteria. Overall, the VCs in Sweden have the lowest rejection rate. Finally, the criteria that no single VC regards as essential are presented. These criteria do not play a crucial role in the rejection decision of the VC.

¹⁶ The difference between the number of entrepreneur related criteria that have a rejection rate of 0% in Table 18 and the data file can be explained by the fact that Table 18 only presents the criteria with a 0% rejection rate in the Netherlands.

4.5 Case studies

The previous section has presented the rejection rates of (a combination of) criteria based on the responses of the VCs. This section applies these rejection rates into real life cases; based on the criteria that VCs find essential the rejection rates are calculated for the eight ventures that appear in the case studies.

The detailed case studies appear in ‘Appendix VIII: Case studies’. It is interesting to see how some of the product and market related criteria mentioned by the VCs (for example the criteria in Table 10) are used in the specific cases to evaluate the venture proposals. Since a lot can be learned from failures, most of the cases represent ventures that did not gain the venture capital funding. However, three success stories are also included about ventures that recently received venture capital.

The eight case studies indicate the investment criteria that VCs have used to evaluate the venture. Also, one can see how the criteria influenced the VCs’ decision to invest or not (either positive or negative). For this research’s purpose, only the product and market related criteria are discussed. All criteria that are mentioned in the case studies appear in Table 27 as well.

An overview of the case studies is presented in Table 20. For each case, the criteria that the VC mentioned are listed in the table, as well as whether the criterion influenced the decision of the VC to (not) invest positively (+) or negatively (-). In addition, the importance of the criterion is presented between brackets. Note that this weight is different across the three countries. If the criterion contributed negatively (that is, a flaw), then the percentage of VCs that would reject the proposal that fails on this specific criterion – the rejection rate – is also presented between the brackets. For example, in case 2 the criterion ‘The product has a disruptive innovation’ contributed negatively to the decision of the VC to not invest (the venture did not have a disruptive innovation). This criterion has a score of 3.64 in Singapore and 9% of the Singaporean VCs would reject this venture solely based on the lack of a disruptive innovation.

When digging deeper into the data, a rejection rate could be calculated for all cases. This percentage is also published in Table 20. The interpretation of the rejection rate – as discussed in section 4.4 – is the VC audience that a venture still has when its proposal has one or more

flaws. For this case studies, the rejection rate of the ventures is calculated by counting the number of VCs that reject a proposal based on the criteria that negatively contributed to the investment decision (that is, give one or more lacking characteristics a score of '5'). Recall that the case studies only looked at the product and market related criteria that VCs use to evaluate the venture proposal. This implies that the calculated rejection rate in the case studies is solely based on the product and market related flaws in the proposal. If other criteria would also be part of the investigation and calculation of the rejection rate, than the rejection rate could be higher.

In the case studies, some VCs did not mention any product or market related flaws in the proposal. Therefore, the rejection rate is 0% (no VC would reject the proposal). Case 4 also shows a high consensus amongst the VCs. The VC of this case decided to not invest in this venture based on a number of criteria (see Table 20). In total 82% of the researched Singaporean VCs would not invest in this venture only based on the product and market related flaws. For case 6, it was also predictable that the venture would not receive venture capital funding; around three out of four Singaporean VCs would reject this proposal based on the product and market related flaws.

Case 7 is perhaps a bit odd. The proposal faces a rejection rate of 75% of the Dutch VCs but did manage to receive venture capital funding. This could be explained by the fact that the two flaws ('the product enjoys demonstrated market acceptance' and 'the entrepreneur can demonstrate a market demand') were not perceived as such during the first round of funding. The VC in question invested in an early-stage venture and expected a market demand and acceptance at the time of the investment. However, when the entrepreneur could not demonstrate a market demand or acceptance, the VC decided to not invest a second round.

Criteria	Rejection rate	Case 1: Cloud computing	Case 2: Image search	Case 3: Configuration management software	Case 4: Social network space	Case 5: Study choice platform	Case 6: Online news portal	Case 7: E-cards	Case 8: Digital photo authentication system
		Sweden	Singapore	Sweden	Singapore	The Netherlands	Singapore	The Netherlands	Singapore
		VC funding	No VC funding	VC funding	No VC funding	VC funding	No VC funding	VC funding	No VC funding
		0%	55%	0%	82%	0%	73%	75%	0%
Characteristics of the product or service									
The product is new, unique, and has substantial innovative content		+ (3.55)	+ (3.60)	+ (3.55)				+ (3.75)	+ (3.55)
A strategy is available to protect the products uniqueness			+ (3.56)						
The product or technology has IP protection			+ (3.10)						
The technology provides a sustainable competitive edge	+ (4.40)		+ (4.40)						
The product has a disruptive innovation		- (3.64; 9%)	+ (2.89)						
The technology is scalable			+ (3.90)						
The technology is proven and validated		+ (3.45)							+ (3.45)
The product has been developed to the point of a functioning prototype									+ (3.55)
The product is ready to market or has short time to market		+ (3.55)				+ (4.08)		+ (4.08)	
The product enjoys demonstrated market acceptance								- (3.67; 17%)	
The product solves a painful problem of a customer			+ (4.00)						
The product performance is superior to competitors' products		- (3.82; 9%)							+ (3.82)
Characteristics of the market (incl. value proposition & revenue model)									
The entrepreneur can demonstrate a market demand						+ (4.67)	+ (4.27)	- (4.67; 75%)	+ (4.27)
The entrepreneur can demonstrate a market gap						+ (3.55)			
The venture is in a dynamic, disruptive market with attractive patterns					- (3.73; 9%)				
The target market has a large growth potential	+ (3.78)					+ (4.67)	- (4.45; 46%)	+ (4.67)	
The implied growth rate between the ventures' size today and in 3-5 years is realistic							- (4.00; 27%)		

There is a large total available market	+ (4.11)				+ (4.50)	+ (4.27)		
The venture is able to (know how to) defend their market in 2-3 years				- (4.09; 27%)				
There is little threat of competition during the first 2-3 years						- (3.09; 9%)	+ (2.83)	
The product has the competitive advantage to be no. 1 or 2 in the market	+ (3.56)			- (3.91; 9%)		- (3.91; 9%)		
An attractive position and/ or large potential market share can be claimed in the market				- (4.09; 27%)	+ (4.00)	- (4.09; 27%)		
The product is scalable across geographies and has international potential			+ (4.00)		+ (4.25)	- (4.63; 55%)		
Competitors are present and known		+ (3.55)						
Customers are known and/ or there are already some customers	+ (3.89)							
The venture will stimulate an existing market	+ (3.43)							
The venture will create a new market		- (2.91; 0%)					+ (2.33)	
The product has a strong value proposition for a specific target market	+ (4.22)	- (4.27; 55%)		- (4.27; 55%)				
The value proposition provides barriers to entry					+ (3.50)			
People will pay for the product				- (4.27; 55%)				
The revenue model is proven in small scale	+ (3.78)					+ (3.36)		
The revenue model adds value					+ (4.09)	- (4.45; 27%)		
The revenue model is scalable					+ (4.55)	- (4.83; 55%)		

Table 20: An overview of the case studies and the mentioned criteria. See ‘Appendix VIII: Case studies’ for the detailed case studies.

Based on an evaluation of the ventures on a number of (not all) criteria, the rejection rate is calculated for all eight ventures. All ventures that have a corresponding rejection rate of 0% (so no single VC would reject them based on a number of criteria) received venture capital, except for Venture 8. On the other hand, all ventures that have a rejection rate that is higher than 0% did not get venture capital funding, except for Venture 7 (although this venture did not get a second round funding). From this it could be concluded that the calculated rejection rate for the ventures is a good indicator of whether or not the venture received venture capital.

4.6 Contributions of this chapter to the research questions

This chapter has identified 19 product and 44 market related criteria that VCs use when evaluation ventures. The results appear in Table 25 and Table 26 in ‘Appendix VI: Product and market related criteria’. Therefore, the second research question has been answered. The most important finding is that this study found an *additional* number of 14 product and 39 market related criteria compared to the number of product and market related criteria that MacMillan et al. (1985) found.

This chapter has also presented the mean scores of the criteria based on the responses of the VCs (see Table 10). Many of the criteria that this research has suggested score higher than 3.75 (in the Netherlands). To illustrate this, Table 21 presents the number of criteria (above 3.75 and below 3.00) that MacMillan et al. (1985) and this study have identified.

	Product criteria (19)		Market criteria (44)	
	MacMillan	This study	MacMillan	This study
Higher than 3.75	1	6	2	18
Below 3.00	1	1	2	5

Table 21: Number of criteria that are suggested by MacMillan et al. (1985) and this study that score higher than 3.75 and below 3.00 in the Netherlands.

As explained, this study is responsible for suggesting as many as six out of seven product related criteria above 3.75 and 18 out of 20 market related criteria above 3.75. This also implies that as many as six of the 19 (= 32%) product and 18 of the 44 (= 41%) market related criteria that this research has suggested score higher than 3.75. In addition, this study suggested one out of 19 (= 5%) product related criteria below 3.00 and five out of 44 (= 11%) market related criteria below 3.00. It can therefore be concluded that the product and market

related criteria that this research suggests are a good addition to the criteria that MacMillan et al. (1985) have already found.

In addition, as much as 40 (the Netherlands), 42 (Singapore), and 33 (Sweden) of the 63 product and market related criteria scored 3.50 or higher. From this it can be concluded that there are more product and market related investment criteria of great influence for VCs than the number of criteria that previous literature found and/ or tested. The product and market related investment criteria found in this study are therefore a contribution to the existing knowledge about product and market related criteria of VCs.

This chapter has also presented how important the product and market related criteria are considered by VCs. The importance is measured in both the mean scores of the individual criteria and the rejection rate of a criterion or a combination of criteria. The results appear in the tables across the chapter. The case studies provided practical examples of how the criteria are used and how they contribute to the decision of the VC to invest or not. All this information answers the third research question ‘How important do VCs consider these product and market related investment criteria when evaluating ventures?’.

In addition, the fourth research question ‘How important are these product and market related investment criteria compared to the importance of other criteria that VCs use when evaluating ventures?’ is also answered in this chapter. Criteria that relate to the entrepreneur or financial considerations are presented in multiple tables in this chapter, as well as their mean scores and rejection rates.

5. Conclusions

The objective of this research is to get qualitative as well as quantitative information about how VCs evaluate new venture proposals, what investment criteria they use, how important these investment criteria are, and based on what criteria VCs decide to reject proposals or to invest in ventures. The problem statement that this research aimed to solve is: “What product and market related investment criteria do VCs in the Netherlands, Singapore, and Sweden use - and how important are these criteria - when they evaluate early-stage IT and Internet ventures’ proposals in the due diligence phase?”.

In preliminary questionnaires, during interviews with VCs, and in previous literature a large number of investment criteria have been identified. Some criteria were mentioned only once (e.g. ‘(uncertain) political factors do/ will not interfere the market’) whereas others were mentioned by almost all VCs (e.g. ‘the target market has a large growth potential’) After a superficial selection a total number of 19 product and 44 market related investment criteria have been brought together into a list.

As much as 40 (the Netherlands), 42 (Singapore), and 33 (Sweden) of the 63 product and market related criteria scored 3.50 or higher. From this it can be concluded that there are more product and market related investment criteria of great influence for VCs than the number of criteria that previous literature found and/ or tested. The product and market related investment criteria found in this study are therefore a contribution to the existing knowledge about product and market related criteria of VCs.

What criteria contribute most to the decision of a VC to invest in the venture? The most important criteria that relate to product respectively market in the Netherlands and Singapore are ‘the technology is scalable’ and ‘the revenue model is scalable’. In Sweden, the criterion ‘the technology provides a sustainable competitive advantage’ scores the highest in the product category. An overview of the most important criteria is presented in Table 22.

Rank	The Netherlands		Singapore		Sweden	
	Criterion	Mean	Criterion	Mean	Criterion	Mean
1	The revenue model is scalable	4.83	The technology is scalable	4.64	The technology provides a sustainable competitive edge	4.40
2	The technology is scalable	4.67	The revenue model is scalable	4.55	People will pay for the product	4.22
3	The entrepreneur can demonstrate a market demand	4.67	The technology provides a sustainable competitive edge	4.45	The venture has a large growth potential	4.22
4	The target market has a large growth potential	4.67	Capable of sustained intense effort	4.45	The product has a strong value proposition for a specific target market	4.22
5	People will pay for the product	4.64	The target market has a large growth potential	4.45	The implied growth rate between the ventures' size today and in 3-5 years is realistic	4.22

Table 22: Main findings: The top five criteria with regard to the importance of criteria higher than 3.75 (same as Table 14)

Striking is that the criterion ‘The product or technology has IP protection’ scores relatively low in all three countries. IP protection in the IT & Internet industry is thus not that important to a VC in the Netherlands, Singapore or Sweden. This is contradictory to the conventional wisdom that IP is very important.

Besides product and market related criteria, also other criteria that relate to the entrepreneur and financial considerations have been rated by VCs. The results – when considering the average score of all the criteria in the category – are that the category ‘the entrepreneur’s personality’ scores high in all three countries (even highest in the Singapore and Sweden). Remarkably, the category ‘financial considerations’ scores relatively low in the Netherlands and Sweden. Although most VCs aim to get a return on investment of 10 times their invested amount, the financial related criteria score low on average in these two countries. Another notable result is that the average score of all the criteria in the category ‘the entrepreneur’s experience’ is the lowest in all three countries.

Past literature about the investment criteria of VCs indicates the entrepreneurial criteria as the most important criteria. This research wants to test whether the entrepreneur related criteria are indeed more important to VCs than product and market related criteria, as previous studies would suggest. Based on the categories of criteria (that is, the average score of all the criteria

in the category), the conclusion of this research could be that the criteria that relate to the entrepreneur's personality are indeed the most important.

However, this study found several evidences that the entrepreneur related criteria are not the *most* important criteria to VCs when compared per criterion for three reasons. First, in Singapore six product or market related criteria score equal to or higher than the highest score of the entrepreneurial criteria in that country. In Sweden and the Netherlands this number is even higher (eight). In the top five criteria (see Table 22), no single criterion relates to the entrepreneur. Instead, all criteria relate to the product and market. Concluding, some individual product and market criteria are more important than the entrepreneur related criteria.

Second, the rejection rates have been evaluated to find out the percentage of VCs that is still interested in the venture even if it has one or two flaws. Amongst the ten criteria most rated 'essential' by VCs in the Netherlands no single criterion relates to the entrepreneur. Thus, although Dutch VCs rate the criteria that relate to the entrepreneur's personality on average the highest, they do not find that criteria essential. Criteria that relate to the entrepreneur are hence not a top ten reason to reject the proposal. Instead, the top ten of the criteria most rated essential solely consists of product and market related criteria.

Third, 20% to 60% of the tested criteria that relate to the entrepreneur's personality have a zero rejection rate. This means that no single VC would reject the proposal based on a flaw that relates to these criteria. Thus, although the average score of entrepreneur related criteria is high (even highest compared to other categories of criteria in Singapore and Sweden and the second highest in the Netherlands) there is a significant number of criteria related to the entrepreneur's personality that do not score a single '5' (that is, 'essential').

This research confirms the conclusions of previous studies that *overall* the entrepreneur related criteria are most important to VCs. Because, if one looks at the average score of all criteria, then the criteria that relate to the entrepreneur's personality scores high in all three countries (even highest in the Singapore and Sweden).

However, the conclusion of previous literature can be nuanced, because when criteria are analysed on individual basis it can be seen that there is a large number of individual product

and market related criteria that score higher (thus are more important), have a higher rejection rate, and are less likely to have a zero rejection rate than entrepreneur related criteria.

To conclude, because the product and market related criteria contribute more to the decision of a VC to invest in a venture, and because the product and market related criteria contribute more to the rejection of venture proposals, this research finds that product and market related criteria are more important than entrepreneur related criteria.

6. Implications and future research

This study has identified the importance of investment criteria that VCs use when evaluating venture proposals. The implications and applications of this knowledge will be discussed in this chapter. Four ‘stakeholders’ that could use (the results of) this study have been identified; the research community, the entrepreneurial community, B&M (the principal), and the venture capital community. In this order, the implications and applications will be presented.

6.1 Research community

The first stakeholder is the research community. Because of the shortcomings of previous research, one could see that the available scientific literature about VCs’ investment criteria was not sufficient to solve the research questions of this research. There appears to be a discrepancy between (1) the knowledge about VCs’ investment criteria and decision process that this research *wants* and (2) what the available scientific literature *offers*. This study aims to bridge that gap, by expanding the current knowledge of the investment decision process in the specific scope that was mentioned earlier in this chapter.

This research contributes to literature about VC’s investment criteria for several reasons. Most important (and in contrast to previous literature), this research has an explicit focus with regard to the investment stage, stage in the decision making process, industry perspective, *and* geographic perspective that are studied, and is thus overcoming the mentioned shortcomings in previous literature about investment criteria.

In addition, no other study so far has made a distinction between the industry focus of the VC. Also, this is the first study that researched the investment criteria of VCs in Sweden and the Netherlands.

This study aimed to explore a small island very carefully instead of a large continent superficially. The scope of this research, as presented in ‘1.3 Research scope and objectives’, is deliberately narrow. Future research could expand the literature about investment criteria of VCs by using the methodology of this research to find (the relative importance of) criteria in other categories (e.g. entrepreneur or finance related), and by studying the criteria in other investment stages (i.e. seed, expansion, and late stages) or in other industries (e.g. life science, clean tech, smart devices). In addition, the investment criteria in different phases of the decision process (e.g. screening, term sheet) could be studied to capture the complete set of

criteria during the process from deal flow to deal. Of course, also other countries could be researched so that comparisons could be made between different geographies and to serve the local entrepreneurs better in understanding the decision of the VCs in their area.

Whatever scope future researchers use, they should learn from this study that they should choose a defined research population by opting focus areas in the four variables:

- the industry of the venture;
- the stage of the venture;
- the phase in the decision process;
- the country where the VC operates.

Not having a focus would lead to general instead of concrete findings.

Another suggestion for future research is to investigate if there is also a difference in the responses of large and small VCs with respect to the importance of investment criteria. The size of the VC could be the fifth variable, and could be measured in the number of deal flows of the VC, the money under investment control, or the average deal size. This research did not execute a statistical test to analyse whether the responses of the large VCs differ from the small VCs. On first glance, there do not exist noticeable differences. However, if there would be a significant difference, than future research should adopt the size of the VC as a variable for which a focus areas should be chosen (either research large or small VCs).

A follow-up study could also use the results of this study to gain more reliable results with regard to the relative importance of the investment criteria. As was mentioned in section '3.4 Limitations' the Likert scale has some inherent limitations. Conjoint analysis/ pair wise trade-offs has proven to be a useful tool to find the relative importance of variables and to have a smaller bias than the Likert methodology. But, if the number of variables is large (so a lot of pairs must be compared), the time investment of the participating VCs will be high and hence it will be hard to get many responses. However, a follow-up study could use the investment criteria from this study that are rated most important (score significantly higher than, say, 4) for the pair wise trade-offs to improve the scientific reliability of the results about the relative

importance of the criteria. In this case, only 10 (Singapore) to 12 (the Netherlands) criteria would be used for conjoint analysis in a follow-up study.¹⁷

Having more insight in the investment criteria of VCs can improve an entrepreneur's chances of receiving venture capital funding, but is not a guarantee for the venture's success. This study does not address whether the criteria are actually helpful in distinguishing successful from unsuccessful ventures, because it only looks in one point in time: the investment decision of the VC. Future research in this topic could be based on the study of MacMillan et al. (1987) to determine the extent to which criteria identified in this study are useful predictors of performance. In order to have useful and specific results, it is recommended to determine a clear focus for that study that is comparable to the research scope of this study.

It is noticed that VCs in Sweden and the Netherlands tend to play a more active role in acquiring deal flow than VCs in Singapore. This could be an indicator that the entrepreneur-VC ratio in Singapore is larger than in Sweden and the Netherlands, who experience more competition in funding high potential early-stage IT and Internet ventures. It is known that entrepreneurs also 'shop' for VCs in order to find the VC that best meet their profile and expectations and to increase the bargaining leverage (De Clercq, Fried, Lehtonen, & Sapienza, 2006). It would be interesting to see what kind of criteria *entrepreneurs* use when evaluating VCs. This topic would especially be relevant in the areas where the entrepreneur-VC ratio is low and there exists much competition between VCs. The evaluation criteria of entrepreneurs could therefore also be topic for future research.

Finally, it would be interesting to research the importance of investment criteria (using focus) in more countries. Before the responses of the VCs were analysed, it was expected that the Dutch VCs and the Swedish VCs would act similarly. Although no formal statistical test has been performed, on first glance it could be concluded that the responses of the VCs in the Netherlands and Singapore are very much alike, and Swedish VCs seem to have a different opinion (see for example Table 14). Perhaps future research can find clusters of countries where the VCs respond similarly with regard to the importance of investment criteria (for example an Anglo-Saxon model, a Scandinavian model, etc.).

¹⁷ In Sweden, there are no criteria that score significantly higher than 4. In that case, a number (3.5 to 4) could be chosen such that there are enough criteria to do the pair wise trade-off with.

6.2 Entrepreneurial community

The second stakeholder is the entrepreneurial community, especially in the Netherlands, Singapore, and Sweden. This research is practically relevant for many enterprises that are professionally involved with VCs like fund providers (insurance companies and pension funds), business developers, co-investors and finally – and most importantly – start-up ventures looking for venture capital funding because it creates a better understanding of how VCs act. The findings of this research can therefore help those enterprises to improve the cooperation – in the broadest sense – with VCs.

One specific target group of this research is early-stage IT and Internet entrepreneurs. This research is relevant to them because it aims to provide them with concrete insights in the (relative importance of) investment criteria of VCs. It is argued that, if entrepreneurs better know what VCs find important in a new venture proposal, they can assess how their ventures compare with these criteria and take the steps necessary to resolve any major flaws in their proposals before submitting them (MacMillan, Siegel, & Subba Narasimha, 1985; Hall & Hofer, 1993). In this way the entrepreneurs can favourably position their ventures and are more likely to gain venture capital (Carter & Van Auken, 1994).

Before adapting the findings of this study, entrepreneurs should be aware of the limitations of the methodology used (see section ‘3.4 Limitations’). The results will only be useful if the entrepreneur uses them wisely, remains critical, and does not forget to think for him- or herself.

It is important for entrepreneurs to realise that every VC has its own set of criteria that they use when evaluating venture proposals. In Table 10, the *mean* scores of the importance of the investment criteria have been presented. Especially the criteria with a high standard deviation (e.g. ‘the product has been developed to the point of a functioning prototype’ and ‘people will pay for the product’ have a standard deviation higher than 1 in Singapore and 1.2 in Sweden, see Table 10) indicate a high level disagreement between the VCs. Criteria that score very low (e.g. ‘the product is different than the trend in the market’ has a mean score of 1.92 in the Netherlands, see Table 11) may seem to be unimportant, but should not be neglected by the entrepreneurs. After all, even the ‘unimportant’ ranked criteria are mentioned by at least one VC.

In addition, some VCs might find certain criteria of little importance in their investment decision because they can change that element once they have invested and are in the board of the venture (recall that venture capital is often referred to as “smart money”). For example, some VCs have changed the revenue model of the venture to be more profitable or to create a more sustainable competitive advantage. An implication for entrepreneurs is that they can look for VCs that can fill the ‘gaps’ of their venture, and therefore complement the weak points of the venture that can be identified by evaluating the venture on the criteria.

Also, some VCs mentioned in the interviews that they do not find the entrepreneur very important because they can change the CEO if that is better for the company (usually in good consultation with the entrepreneur). In other words, VCs can find criteria important, but have not rated them in accordance. This means that the results might be slightly biased.

Finally, from Table 17, VCs operating in Sweden emerge as the most tolerant as they demonstrate a relatively lower rejection rate, nearly across the board whereas the toughest VCs seem to be in the Netherlands. Entrepreneurs should learn from this that the importance of investment criteria differs per country. Entrepreneurs that lack certain criteria can opt to present their proposals to VCs in other countries or move to another country where the venture is more likely to receive venture capital funding.

6.3 B&M

The third stakeholder is B&M, the principal of this research. The results of this research can be used by B&M in several ways. First, it contributes the general understanding of the criteria that VCs use when they evaluate new venture proposals. B&M can use the findings to be able to better advise their clients that are looking for venture capital funding, for example by using the findings to (co-)write business proposals that better meet the VCs’ expectations. If the venture has all relevant elements present, B&M can advise the entrepreneur to strategically adjust the business proposal so that the topics that are rated important by VCs (e.g. ‘the technology is scalable’ and ‘the revenue model is scalable’, see Table 10) are better profiled in the proposal. This would increase the chances of the entrepreneurs to receive the funding. If the venture lacks certain elements (see also Table 17 and Table 18), B&M can advise the entrepreneur to take some time to improve or create those elements and try to get the venture capital funding at a later moment.

B&M could also use the findings of this study to create a tool that is able to quickly evaluate the potential of new ventures. The input for this tool will be (amongst others) the investment criteria found by this research and the level of importance as attached to the criteria by VCs. B&M can use the tool to assess the venture at the individual criteria by assigning scores to the venture per criterion. The total score of the venture can be calculated by multiplying the score per criterion times the weight of that criterion. The weight will be based on the mean value of the VCs' responses on that criterion. This tool can more or less objectively point out what the strong and weak points are of the venture.¹⁸ The tool can also include the essential criteria analysis, so that B&M can estimate the rejection rates of the ventures based on the flaws in their proposals.

B&M could also expand their position as an intermediary between with VCs and entrepreneurs and establish a reputation of a trustworthy source of referrals. VCs appreciate high quality deal flow (Heuven, 2009) so B&M can do a pre-evaluation of the venture before they refer the venture to a VC (e.g. by using the tool mentioned above). B&M could use the findings (e.g. Table 17 and Table 18) to make sure they refer the venture proposals that have enough potential to receive venture capital funding. This will probably increase the chances of a venture to receive venture capital funding so that the 'success rate' of venture that are referred to by B&M will be higher than the mentioned two percent of the deals that ultimately receive venture capital funding (Fried & Hisrich, 1994).

Another implication for B&M could be that they can serve as a professional external party in the due diligence analysis of the VCs. The expertise of B&M – strategy formulation, market analysis, and quick scans for high-tech ventures – can complement the due diligence analysis of the VCs in order to reduce the information asymmetry between the venture and the VC. In this way, B&M can help the VCs to evaluate the market related criteria more thoroughly.

6.4 Venture capital community

The fourth stakeholder is the venture capital community. This community can benefit from this study in several ways. Criteria that VCs use implicitly in the decision process are now presented explicitly. It is not expected that VCs will adjust their set of criteria because of the findings of this research, but they may be more aware of the investment criteria they (could)

¹⁸ This tool is quite similar to the G/Score, a tool of an American company (see <http://guidewiregroup.com/services/g-score/>). However, the B&M tool will have weights per criterion and will have a more extensive list of criteria that can be used to assess the venture's potential.

use and how they apply them. The findings, but also a VC's participation in this research, could therefore result in a more conscious use of the investment criteria when evaluating new venture proposals.

The findings could also be used as a benchmark for VCs to compare the importance they assign to their investment criteria with the presented overall weights of other VCs in the industry. This knowledge could be used to develop a distinguishing position in the venture capital community towards entrepreneurs who are looking for venture capital funding. For example, in Table 12 one can see that in the Netherlands the category 'entrepreneur's personality' gets the highest average weight from all VCs. A Dutch VC can use this information to profile itself as a VC that aims for good ideas more than for nice entrepreneurs.

References

- Arrindell, W. A., & Van der Ende, J. (1985). An Empirical Test of the Utility of the Observations-to-Variables Ratio in Factor and Components Analysis. *Applied Psychological Measurement* (Vol. 9, No. 2), 165-178.
- Baeyens, K., Vanacker, T., & Manigart, S. (2006). Venture capitalists' selection process: the case of biotechnology proposals. *International Journal of Technology Management* (Vol. 34, Nos. 1/2), 28-46.
- Black, B. S., & Gilson, R. J. (1998). Venture Capital and the Structure of Capital Markets: Bank Versus Stock Markets. *Journal of Financial Economics* (47), 243-277.
- Bruton, G. D., Ahlstrom, D., & Singh, K. (2002). The Impact of the Institutional Environment on the Venture Capital Industry in Singapore. *Venture Capital* (Vol. 4, No. 3), 197-218.
- Bygrave, W. D., & Timmons, J. A. (1992). *Venture Capital at the Crossroads*. Boston, MA: Harvard Business School Press.
- Carter, R. B., & Van Auken, H. E. (1994). Venture Capital Firms' Preferences for Projects in Particular Stages of Development. *Journal of Small Business Management* , 60-73.
- Davila, A., Foster, G., & Gupta, M. (2003). Venture Capital Financing and the Growth of Startup Firms. *Journal of Business Venturing* (18), 689-708.
- De Clercq, D., Fried, V. H., Lehtonen, O., & Sapienza, H. J. (2006). An Entrepreneur's Guide to the Venture Capital Galaxy. *The Academy of Management Perspectives* (Vol. 20, No. 3), 90-112.
- Dixon, R. (1991). Venture Capitalists and the Appraisal of Investments. *OMEGA* (19(5)), 333-344.
- Economist Intelligence Unit. (2010). *Digital economy rankings 2010*. IBM Institute for Business Value. London: Economist Intelligence Unit.
- EVCA. (2010). *Central and Eastern Europe Statistics 2009*. Brussels: EVCA.
- EVCA. (2010, June 10). Glossary of Definitions. <http://www.evca.eu/toolbox/glossary.aspx?id=982> .
- Expara. (2010). *Media Entrepreneur's Guide to Singapore*. Singapore: Expara Pte. Ltd. and The Media Authority of Singapore.
- Fenn, G. W., Liang, N., & Prowse, S. (1995). *The Economics of the Private Equity Market*. Staff Study 168. Washington, DC: Board of Governors of the Federal Reserve System.

- Fried, V. H., & Hisrich, R. D. (1994). Toward a Model of Venture Capital Investment Decision Making. *Financial Management* (Vol. 23, No. 3), 28-37.
- Gompers, P. A., & Lerner, J. (1998). What Drives Venture Capital Fundraising. *Brooking Papers on Economic Activity. Microeconomics* (Vol. 1998), 149-204.
- Hall, J. (1989). *The Entrepreneur and New Venture Performance: An Empirical Investigation*. University of Georgia: Doctoral dissertation.
- Hall, J., & Hofer, C. W. (1993). Venture Capitalists' Decision Criteria in New Venture Evaluation. *Journal of Business Venturing* (8), 25-42.
- Hellmann, T., & Puri, M. (2000). The Interaction Between Product Market and Financing Strategy: The Role of Venture Capital. *The Review of Financial Studies* (Vol. 13, No.4), 959-984.
- Heuven, J. (2009). *The Role of Referrals in Financing Technology-Based Ventures*. Enschede: University of Twente.
- Jaeger, R. G., & Halliday, T. R. (1998). On Confirmatory versus Exploratory Research. *Herpetologica* (Vol. 54), S64-S66.
- Kaplan, S. N., & Strömberg, P. (2004). Characteristics, Contracts, and Actions: Evidence from Venture Capitalist Analyses. *The Journal of Finance* (Vol. LIX, No. 5), 2177-2210.
- Khanin, D., Baum, J. R., Mahto, R. V., & Heller, C. (2008). Venture Capitalists' Investment Criteria: 40 Years of Research. *Small Business Institute Research Review* (Vol. 35), 187-192.
- Knight, R. M. (1986). Criteria Used By Venture Capitalists. *Journal of Small Business and Entrepreneurship* (Vol. 3, No. 4), 3-9.
- Leach, J. C., & Melicher, R. W. (2006). *Entrepreneurial Finance*. Mason, OH: Thomson South-Western.
- MacMillan, I. C., Siegel, R., & Subba Narasimha, P. N. (1985). Criteria Used by Venture Capitalists to Evaluate New Venture Proposals. *Journal of Business Venturing* (1), 119-128.
- MacMillan, I. C., Zemann, L., & Subba Narasimha, P. N. (1987). Criteria Distinguishing Successful from Unsuccessful Ventures in the Venture Screening Process. *Journal of Business Venturing* (2), 123-137.
- Manigart, S. (1994). The Founding Rate of Venture Capital Firms in Three European Countries (1970-1990). *Journal of Business Venturing* (9), 525-541.

- Manigart, S., De Waele, K., Wright, M., Robbie, K., Desbrières, P., Sapienza, H. J., et al. (2002). Determinants of Required Return in Venture Capital Investments: A Five-Country Study. *Journal of Business Venturing* (17), 291-312.
- Mayer, C., Schoors, K., & Yafeh, Y. (2005). Sources of Funds and Investment Activities of Venture Capital Funds: Evidence from Germany, Israel, Japan and the United Kingdom. *Journal of Corporate Finance* (11), 586-608.
- Murray, G. C., & Lott, J. (1995). Have UK Venture Capitalists a Bias Against Investment in New Technology-Based Firms? *Research Policy* (24), 283-299.
- Muzyka, D., Birley, S., & Leleux, B. (1996). Trade-offs in the Investment Decisions of European Venture Capitalists. *Journal of Business Venturing* (11), 272-287.
- NVP. (n.d.). Zoek participatiemaatschappij. Retrieved July 2010, from Nederlandse Vereniging van Participatiemaatschappijen: <http://www.nvp.nl/zoekppm/>
- Ooghe, H., Manigart, S., & Fassin, Y. (1991). Growth Patterns of the European Venture Capital Industry. *Journal of Business Venturing* (6), 381-404.
- Payne, G. T., Davis, J. L., Moore, B. C., & Bell, R. G. (2009). The Deal Structuring Stage of the Venture Capitalist Decision-Making Process: Exploring Confidence and Control. *Journal of Small Business Management* (47(2)), 154-179.
- PriceWaterhouseCoopers. (2010, Q1). PwC MoneyTree Report. U.S.
- Rah, J., Jung, K., & Lee, J. (1994). Validation of the Venture Evaluation Model in Korea. *Journal of Business Venturing* (9), 509-524.
- Ray, D. M. (1991). Venture Capital and Entrepreneurial Developments in Singapore. *International Small Business Journal* (10(1)), 11-26.
- Riquelme, H., & Rickards, T. (1992). Hybrid Conjoint Analysis: An Estimation Probe in New Venture Decisions. *Journal of Business Venturing* (7), 505-518.
- Rosenstein, J. (1988). The Board and Strategy: Venture Capital and High Technology. *Journal of Business Venturing* (3), 159-170.
- Rosenstein, J., Bruno, A. V., Bygrave, W. D., & Taylor, N. T. (1993). The CEO, Venture Capitalists and the Board. *Journal of Business Venturing* (8), 99-113.
- Sapienza, H. J., Manigart, S., & Vermeir, W. (1996). Venture Capitalist Governance and Value Added in Four Countries. *Journal of Business Venturing* (11), 439-469.
- Silver, D. A. (1985). *Venture Capital: The Complete Guide for Investors*. New York City, NY: Wiley & Sons.

- Siskos, J., & Zopounidis, C. (1987). The Evaluation Criteria of the Venture Capital Investment Activity: An Interactive Assessment. *European Journal of Operational Research* (31), 304-313.
- SVCA. (2009). *Singapore Venture Capital & Private Equity Directory 2009-2010*. Singapore.
- SVCA. (n.d.). Sök medlemmar. Retrieved June 2010, from Swedish Private Equity & Venture Capital Association: <http://www.svca.se/home/page.asp?sid=337&mid=2&PageId=10764>
- Tyebjee, T. T., & Bruno, A. V. (1984). A Model of Venture Capitalist Investment Activity. *Management Science* (Vol. 30, No. 9), 1051-1066.
- Weller, S. C., & Romney, A. K. (1988). *Systematic Data Collection*. Newbury Park, CA: Sage Publications.
- World Economic Forum. (2010). *The Global Information Technology Report 2009-2010*. INSEAD. World Economic Forum.
- Wright, M., Thompson, S., & Robbie, K. (1992). Venture Capital and Management-Led, Leveraged Buy-Outs: A European Perspective. *Journal of Business Venturing* (7), 47-71.
- Zacharakis, A. L., & Meyer, G. D. (2000). The Potential of Actuarial Decision Models: Can They Improve The Venture Capital Investment Decision? *Journal of Business Venturing* (15), 323-346.
- Zopounidis, C. (1994). Venture Capital Modelling: Evaluation Criteria for the Appraisal of Investments. *The Financier ACMT* (Vol. 1, No. 2), 54-64.
- Zutshi, R. K., Tan, W. L., Allampalli, D. G., & Gibbons, P. G. (1999). Singapore Venture Capitalists (VCs) Investment Evaluation Criteria: A Re-Examination. *Small Business Economics* (13), 9-26.

Appendices

Appendix I: Background to venture capital and VCs

Introduction to venture capital

Large companies like Google or Facebook would probably never have been so large and well-known without venture capital funding in the early-stage of their existence. The important role that venture capital plays in providing capital to a wide variety of enterprises is widely recognized. Venture capital is typically raised by venture capitalists (VCs) and invested in high-growth, high risk, often high-technology early-stage firms that need capital to finance product development or growth (Black & Gilson, 1998).

Venture capital is a subset of equity capital (EVCA, 2010). Venture capital investments are generally made as cash in exchange for shares in the invested company. Because of the high risk attitude and the private equity structure, venture capital has the potential for extraordinary high rewards when the entrepreneurial venture is successful (Tyebjee & Bruno, 1984).

Introduction to VCs

VCs are financial intermediaries who raise capital from investors – typically institutional investors like pension funds and insurance companies – for their venture capital fund. Banks and corporate investors, and individual investors also invest in venture capital funds (Mayer, Schoors, & Yafeh, 2005). The organisational form of venture capital funds is dominated by the limited partnerships (Gompers & Lerner, 1998). Investors in the fund are limited partners and must not become involved in the day-to-day to maintain limited liability. The typical cash flows of VCs appear in Figure 2. Sometimes a venture capital fund consists of money that the partners of the venture capital firm put in. In that case, there are no limited partners outside the venture capital firm.

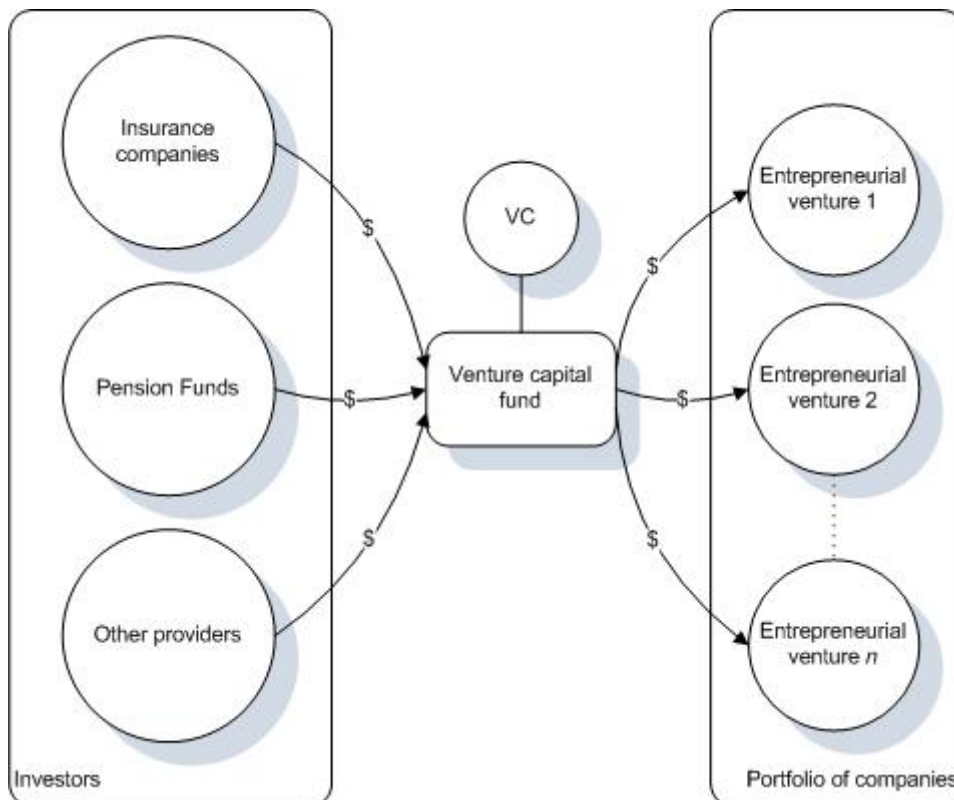


Figure 2: Venture capital investment cash flows: from limited partners (left) to entrepreneurial ventures (right)

Venture capital funds usually have predetermined, finite lifetimes of around ten years, with the possibility of a few years of extensions to allow for private companies still seeking liquidity (Gompers & Lerner, 1998). The first five years are dominated by investments while the last five years by divestments (exits). Divestments are in the most favourable case an initial public offering (IPO) or selling the venture to another (larger) company.

VCs closely follow the market and technology developments in their area of expertise in order to stay in the deal flow and to be able to make an informed investment decision (Fenn, Liang, & Prowse, 1995; Hellmann & Puri, 2000). The deal flow can best be described as the rate of new venture proposals to the VC. VCs usually get their deal flow by third party referrals from other companies (Heuven, 2009). Also non-referred ('cold call') submissions and active market screening by VCs generate deal flow. The proposals that pass the first screening of the VCs will be carefully evaluated using investment criteria to carefully scrutinize the entrepreneurs and their business concepts and assess the ventures' potential (MacMillan, Siegel, & Subba Narasimha, 1985; Fried & Hisrich, 1994). When VCs decide to invest, they bring financial expertise to structuring the deal and setting appropriate incentive and compensation systems (Hellmann & Puri, 2000).

The entire venture capital investing cycle takes around ten to fifteen years. Figure 3 gives a schematic overview of this cycle.

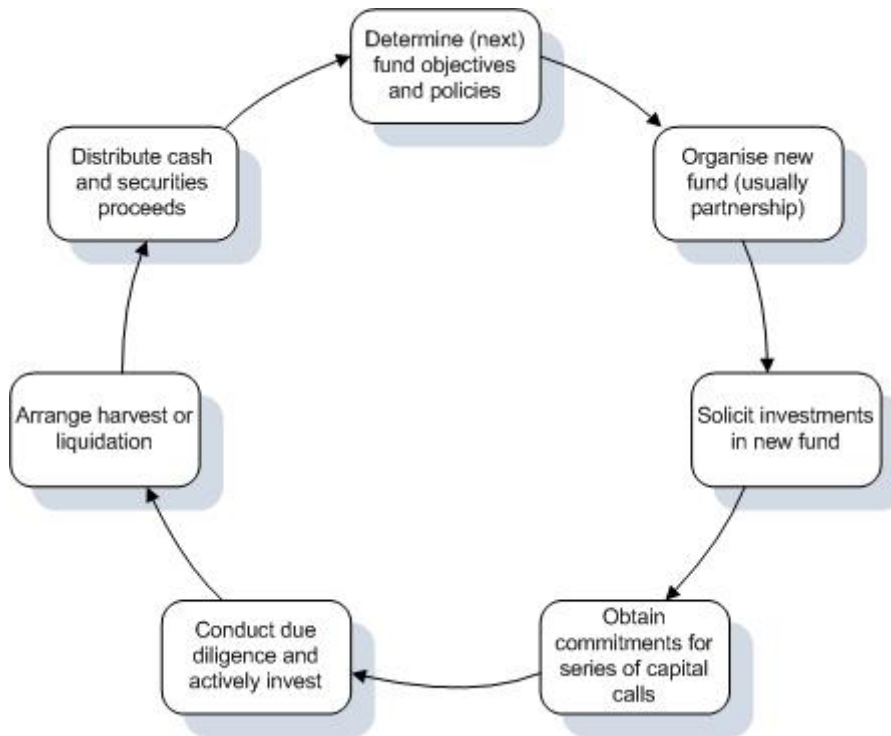


Figure 3: Professional venture capital investing cycle (Leach & Melicher, 2006, p. 430).

VCs are often active investors (Gompers & Lerner, 1998). Besides investing capital VCs also add other relevant factors to the venture (Hellmann & Puri, 2000; Davila, Foster, & Gupta, 2003; Payne, Davis, Moore, & Bell, 2009). VCs continuously monitor their companies, both informally and through participation at the management board of the entrepreneurial venture (Rosenstein, 1988). According to for example Rosenstein (1988) and Bygrave & Timmons (1992) VCs provide managerial and technical expertise, and access to important networks for (amongst others) business contacts and recruiting senior managers, for the venture. VCs also add value by, amongst others, serving as a sound board and monitoring financial and operating performance (Rosenstein, Bruno, Bygrave, & Taylor, 1993). VCs also help the entrepreneurs in the process of raising additional funds by providing certification to outside stakeholders like other VCs or banks. Finally, VCs often take an active role in guiding the exit decision, such as influencing a company's initial public offering (Gompers & Lerner, 1998).

Appendix II: Research scope (extensive version)

In section ‘1.3 Research scope and objectives’, a short summary of this appendix has been presented. This appendix describes in more detail the scope of this research. It is necessary to have this specific focus because the general problem ¹⁹ (see section ‘1.2 Problem identification’) involves too many factors for this research. For example, as explained in section ‘2.2 Shortcomings of previous research’, the mentioned problem does not discriminate between industries or investment stages. Solving this general problem would probably demand too many resources like time and money, and/ or would lead to conclusions that would be too generic to be of any use for the relevant parties, like entrepreneurs who are looking for venture capital funding.

As stated in section ‘1.3 Research scope and objectives’, this research targets to provide entrepreneurs with *concrete* instead of *general* conclusions. In order to be able to draw concrete conclusions for the relevant parties this appendix presents a research scope. The research scope includes the focus areas of this research as well as a justification on the fields of investment criteria, investment stage, stage in the decision making process, industry perspective, and geographic perspective.

Industry perspective: IT and Internet industry

VCS typically invest in companies in the biotechnology, software, energy, medical devices, semiconductors, media and entertainment, IT services, and telecommunication industries (SVCA, 2009; PriceWaterhouseCoopers, 2010). However, some industry and sector names differ per directory or paper.

This research will focus on VCS that invest in high-technology (high-tech) enterprises in the IT and Internet industry. Therefore, this research is especially of interest for entrepreneurs that are active in this industry. The IT and Internet industry in this research covers enterprises in the Information Communication Technology (ICT), software, and telecommunications industry.

¹⁹ The core research problem has been defined as: ‘B&M and early-stage ventures in the IT and Internet industry in the Netherlands, Singapore, and Sweden who are looking for venture capital funding do not sufficiently know what product and market characteristics are of influence - and how important these characteristics are.’

The number of VCs that are active in the IT and Internet industry was of crucial importance to decide to focus the research on this area. Most VCs invest in IT and Internet related enterprises, which makes it easier to reach sufficient response levels.

A second argument is that the time to market is relatively small for ventures in the IT and Internet industry. As a result, it is assumed to be easier for VCs that invest in IT and Internet related ventures to overlook the time horizon and to formulate a realistic and concrete exit strategy. For these reasons it is expected that the investment criteria that VCs use to evaluate IT and Internet related venture proposals are more concrete and measurable than the criteria used to evaluate venture proposals in industries with a longer time to market, like the biomedical or cleantech industry. This argument is also in favour of focusing on the IT and Internet industry for this research. Figure 4 visualises the industry focus of this research.

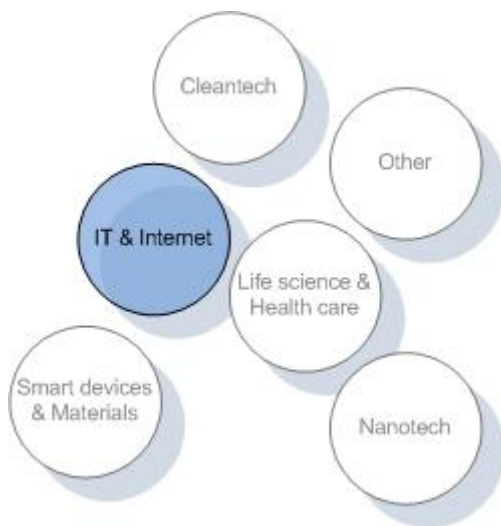


Figure 4: Focus of this research is the IT and Internet industry.

Geographic perspective: the Netherlands, Singapore, and Sweden

Most studies on investment criteria of VCs are done in the U.S.. Capital markets are said to be more mature and dominant in Anglo-American countries (Manigart et al., 2002). The U.S. has a very large venture capital market with a total amount of 4.3 billion U.S.\$ in 681 deals (for the IT and Internet industry 1.3 billion U.S.\$ in 238 deals) in the first quarter of 2010 (PriceWaterhouseCoopers, 2010).

This research, however, is conducted in three other countries: the Netherlands, Singapore, and Sweden. Sweden, Singapore, and the Netherlands all have large (potential) IT and Internet

industry. According to the Global Information Technology Report 2009-2010²⁰ (World Economic Forum, 2010), that provides a picture of the level of ICT development of an economy, Sweden ranks 1st, Singapore 2nd, and the Netherlands 5th with respect to ICT readiness. The same report ranks the venture capital availability in Singapore (3), Sweden (5), and the Netherlands (9)²¹. The Digital Economy Rankings 2010²² report of the Economist Intelligence Unit, which used different criteria, provides comparable ranks: Sweden ranks 1st, Netherlands 5th and Singapore 7th (Economist Intelligence Unit, 2010). As one can read in the previous section, IT and Internet is the industry perspective focus of this research.

B&M is from business perspective especially interested in the investment criteria of VCs in the Netherlands. However, the Dutch venture capital community is relatively small (Manigart et al., 2002; EVCA, 2010). The professional culture in the Netherlands is assumed to be quite similar to Sweden, but the venture capital community in Sweden is larger than in the Netherlands²³ (EVCA, 2010). Finally, practical reasons were of influence; connections with VCs in Sweden were already available. For above mentioned reasons this research is also conducted in Sweden.

Singapore is another area of interest of B&M, because Singapore it often seen as an important hub of and gateway to (South-East) Asia. Besides that, the venture capital community in Singapore has developed strongly over the last decades (Zutshi, Tan, Allampalli, & Gibbons, 1999; Bruton, Ahlstrom, & Singh, 2002) by governmental influence. The government wants to create Singapore into a venture capital community like Silicon Valley, U.S.. The developments of the Singaporean venture capital market are well described by Bruton, Ahlstrom & Singh (2002, pp. 198-203). Because the professional culture is expected to be rather different from the Netherlands, for the purpose of diversity this research is also conducted in Singapore.

²⁰ The Global Information Technology report 2009–2010 provides insight into overall ICT readiness of an economy by calculating an Overall Networked Readiness Index (NRI) ranking for 2009–2010 using 68 variables (e.g. Financial market sophistication, Intellectual property protection, and Accessibility of digital content) from 9 pillars.

²¹ The definition of ‘venture capital availability’ is according to the report “how easy it is for entrepreneurs with innovative but risky projects to find venture capital”. Hong Kong ranks 1st and Norway ranks 2nd in the ranking for venture capital availability.

²² This report assesses “the quality of a country’s ICT infrastructure and the ability of its consumers, businesses and governments to use ICT to their benefit”.

²³ Private equity investments as a percentage of GDP for the Netherlands are 0.138 %, for Sweden 0.370%.

A rough overview of the IT and Internet industry in the U.S., the Netherlands, Singapore, and Sweden is provided in Table 23. In addition, the size of the venture capital industry in the IT and Internet industry is presented in the same countries. The venture capital industry size is measured in both the total investment amount and the number of investments (in all investment stages – from seed to late stage). One should note that the data are derived from different time periods, which are provided between brackets.

Country	Size of IT and Internet industry (turnover)	Investment amount in IT and Internet	Number of deals in IT and Internet
U.S.	M\$ 873,000 ^a (~M€ 655,000) (2008)	M\$ 1,345 ^b (~M€ 1,050) (2010Q1)	250 ^b (2010Q1)
Singapore	M\$ 51,700 ^c (~M€ 27,500) (2007)	[unknown]	[unknown]
Sweden	MSEK 835,000 ^d (~M€ 83,000) (2007)	MSEK 1,314 (~M€ 130) ^e (2008)	139 ^e (2008)
The Netherlands	M€ 31,239 ^f (2008)	M€ 164 ^g (2009)	82 ^g (2009)

Table 23: Overview of the IT and Internet and venture capital industry size.

^a Derived from U.S. Census Bureau: http://www2.census.gov/services/sas/data/54/2008_NAICS54.pdf and http://www2.census.gov/services/sas/data/51/2008_NAICS51.pdf

^b Derived from PWC MoneyTree: <https://www.pwcmoneytree.com/MTPublic/ns/nav.jsp?page=industry>

^c From Singapore Economic Development Board: http://www.edb.gov.sg/edb/sg/en_uk/index/industry_sectors/information_technology/facts_and_figures.html

^d Derived from Statistiska Centralbyrån ‘Informations- och kommunikationsteknik’: http://www.scb.se/statistik/_publikationer/OV0904_2010A01_BR_11_A01BR1001.pdf (p.258)

^e Derived from the Swedish Private Equity Review 2008: <http://www.svca.se/home/news.asp?sid=370&mid=3&NewsId=27816> (p.7)

^f From ABN AMRO ‘Financiële trends in de ICT-sector’: http://www.abnamro.nl/nl/images/Generiek/PDFs/020_Zakelijk/02_Sectoren/Industrie/Industrie_-_Bijlage_rapport_Financi%25C3%25Able_trends_in_de_ICT-sector.pdf (p.3)

^g From Nederlandse Vereniging van Participatiemaatschappijen (NVP) ‘De Nederlandse Private Equity Markt in 2009’: http://www.nvp.nl/docs/ondernemend_vermogen_2009.pdf (p.34)

Investment stage: early-stage

High-tech ventures go through several stages of development. Literature suggests different stages, but it is generally accepted that there are four (major) stages: seed, early-stage, growth/expansion and late stage (PriceWaterhouseCoopers, 2010; EVCA, 2010).

The seed-stage is the initial stage of a venture, that is, usually in existence less than 18 months. A seed-stage ventures is researching, assessing and developing an initial concept or product,

but is probably not fully operational. An early-stage venture usually is in business less than three years and typically has a product or service in testing or pilot production. In some cases, the product may be commercially available. Some early-stage ventures already generate revenues. Some literature state that early-stage finance includes seed and start-up and other early-stage investment (Murray & Lott, 1995). For this research, this view is not adopted; seed stage is not within the scope.

Expansion stage ventures are usually in business more than three years and have products or services in production and commercially available. The ventures demonstrate significant revenue growth, and some are showing a profit. Late stage ventures have product or services that are widely available. The ventures are generating on-going revenues and are likely to be profitable. Some late stage ventures have had an initial public offering (IPO).

In early-stage funding, venture capital is an appropriate form of financing because of its high risk attitude and the potential for extraordinary high rewards when the entrepreneurial venture is successful (Tyebjee & Bruno, 1984; Manigart, et al., 2002). This makes especially early-stage funding rather interesting. Most of B&M's clients are seed and early-stage high-tech companies who are, in some cases, looking for funding. Therefore this research chose VCs that invest in early-stage ventures as focus area. This is presented in Figure 5.

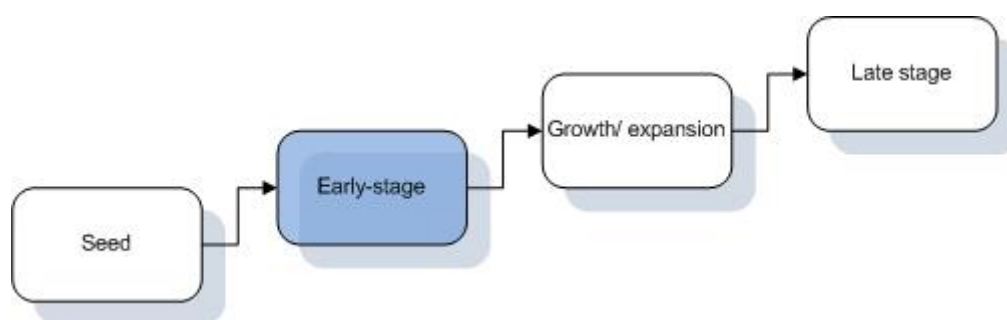


Figure 5: Focus of this research is early-stage.

Phase of the decision process: due diligence phase

Before a VC makes a decision to invest, the proposal has already gone through several phases²⁴. The deal flow or deal generation is the first phase where the VC first sees a proposal. The proposal is screened on several basic criteria like location of the venture and industry. If

²⁴ In literature and in practice, these phases differ from paper to paper (e.g. (Hall, 1989) or (Tyebjee & Bruno, 1984) and VC to VC. An overview is presented by (Hall & Hofer, 1993, p. 28). The mentioned decision process is general and can be used to get a broad understanding.

the proposal is not rejected, it will enter the next phase which often is a meeting between the management team and the VC. Again, some proposals are rejected and others continue to the next phase if there is enough confidence in the plan and the team. After the rough screening phase, a more thorough due diligence is been done to reduce adverse selection and information asymmetry problems (Dixon, 1991; Baeyens, Vanacker, & Manigart, 2006). During the due diligence, the VC looks (amongst others) at sales forecasts, financial projections, competitors, and potential customers. In the due diligence phase often the preliminary decision “to invest or not invest” is been made. Many proposals are rejected during this phase. If the due diligence phase is completed, the VC will valuate the company and write a term sheet that includes financial agreements about the investment. After the contracting phase – if the entrepreneurs and the VC agree upon the terms and sign the deal – the actual investment is done. In some cases, the investment is done in phases too in order to lower the risk for the VC. In some cases the term sheet is (conditionally) agreed upon between the VC and the entrepreneur before the due diligence. If the VC does not find any new surprises during the due diligence, then the term sheet is signed. In any way, this research focuses on the investment criteria just before, during, and shortly after the thorough screening of the venture.

One goal of this research, as stated in section ‘1.4 Problem statement and research questions’, is to provide entrepreneurs with concrete insights about what VCs find important in a new venture proposal. In this way the entrepreneurs can favourably position their ventures and are more likely to obtain venture capital. The investment criteria that VCs use in the due diligence phase (see chapter 2) are assumed to be of most interest for entrepreneurs because the current knowledge about investment criteria is explained (see section ‘1.2 Problem identification’) to be too generic or irrelevant to be of any use for entrepreneurs.

Meanwhile, the criteria that VCs use to evaluate new venture proposals in the screening phase are assumed to be well-known by the entrepreneur, or can be requested from VCs. Some VCs publish the specific criteria they use for their first filter for instance on their website. VCs evaluate venture proposals in the screening phase quickly and objectively with criteria like industry, stage of enterprise, geographical location, and sometimes the presence of a referral. If the venture proposal fails on one or more of these criteria, the proposal is usually rejected directly.

Concluding, since more – and more relevant – knowledge can be gained at researching the investment criteria that VCs use during the due diligence phase instead of during the screening phase, this research focuses on the former. This is visualised in Figure 6.

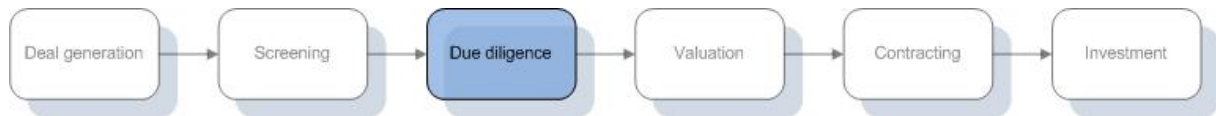


Figure 6: Focus of this research is the due diligence phase (to invest or not invest).

Investment criteria: product and market related

Previous literature stressed the importance of the (competences of) entrepreneur or entrepreneurial team in obtaining venture capital. The main conclusions of those studies were that “above all it is the quality of the entrepreneurs that ultimately determines the funding decision” (MacMillan, Siegel, & Subba Narasimha, 1985, p. 128). Entrepreneurs should build “a good management team with strong leadership and appropriate competencies” in order to focus on the fundamentals of capturing an opportunity (Muzyka, Birley, & Leleux, 1996, pp. 285-286).

However, many studies found evidence for multiple groups of criteria that VCs use when evaluating new venture proposals (e.g. Muzyka et al., 1996; Kaplan & Strömberg, 2004; Payne et al., 2009). Besides the entrepreneurial team also product and market related investment criteria and – to smaller extent – financial, strategic and deal related investment criteria have been identified and quantified. This research does not focus on the entrepreneurial team related investment criteria but rather on the product and market related investment criteria.

There are two main reasons to do so. First, many good studies have already been dedicated to the size, composition and characteristics of the management team (e.g. by Rosenstein, 1988; and Rosenstein et al., 1993). This knowledge about the management team has therefore already been widely documented.

Compared with other investment criteria than entrepreneur related criteria (e.g. financial, strategic, and deal related) product and market related investment criteria have most influence on the VCs’ proposal evaluation, according to several previous studies (e.g. Tyebjee & Bruno,

1984; MacMillan et al., 1985; Rah, Jung, & Lee, 1994). This research wants to test whether the entrepreneurial team related criteria are indeed more important for VCs than product and market related criteria, as previous studies would suggest.

Second, most clients of B&M are already well aware of the importance of a good management team that covers the wide range of competencies needed. This is actually an important criteria that B&M uses to evaluate and select entrepreneurial ventures before committing themselves to put time and effort in them. Either the venture already has a complete management team (possibly with an external board member) or the venture wants to gain B&Ms market strategy related competencies by cooperating with B&M. One business developer of B&M will part time join the venture as an interim manager to cover these market strategy related competencies. For this reason, entrepreneurial team related investment criteria are less relevant for B&M.

Considering both reasons, this research focuses on the product and market related investment criteria that VCs use when evaluating new venture proposals. Figure 7 visualises this.

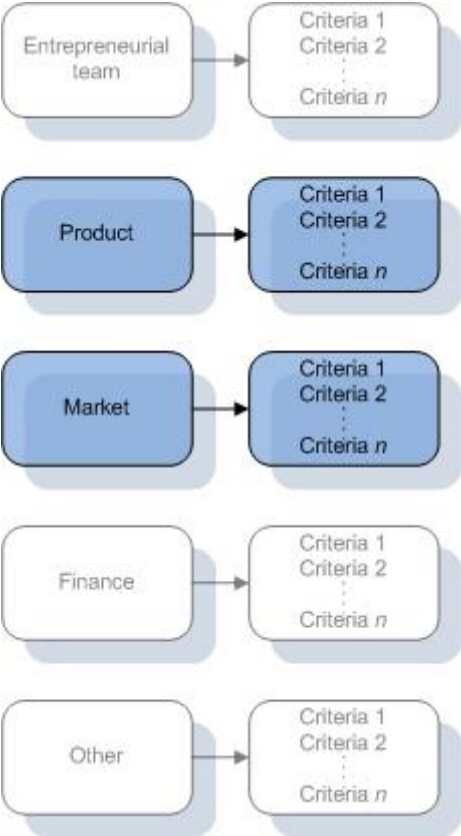


Figure 7: Focus on product and market related investment criteria.

A complete overview of the focus areas is presented in Figure 8.

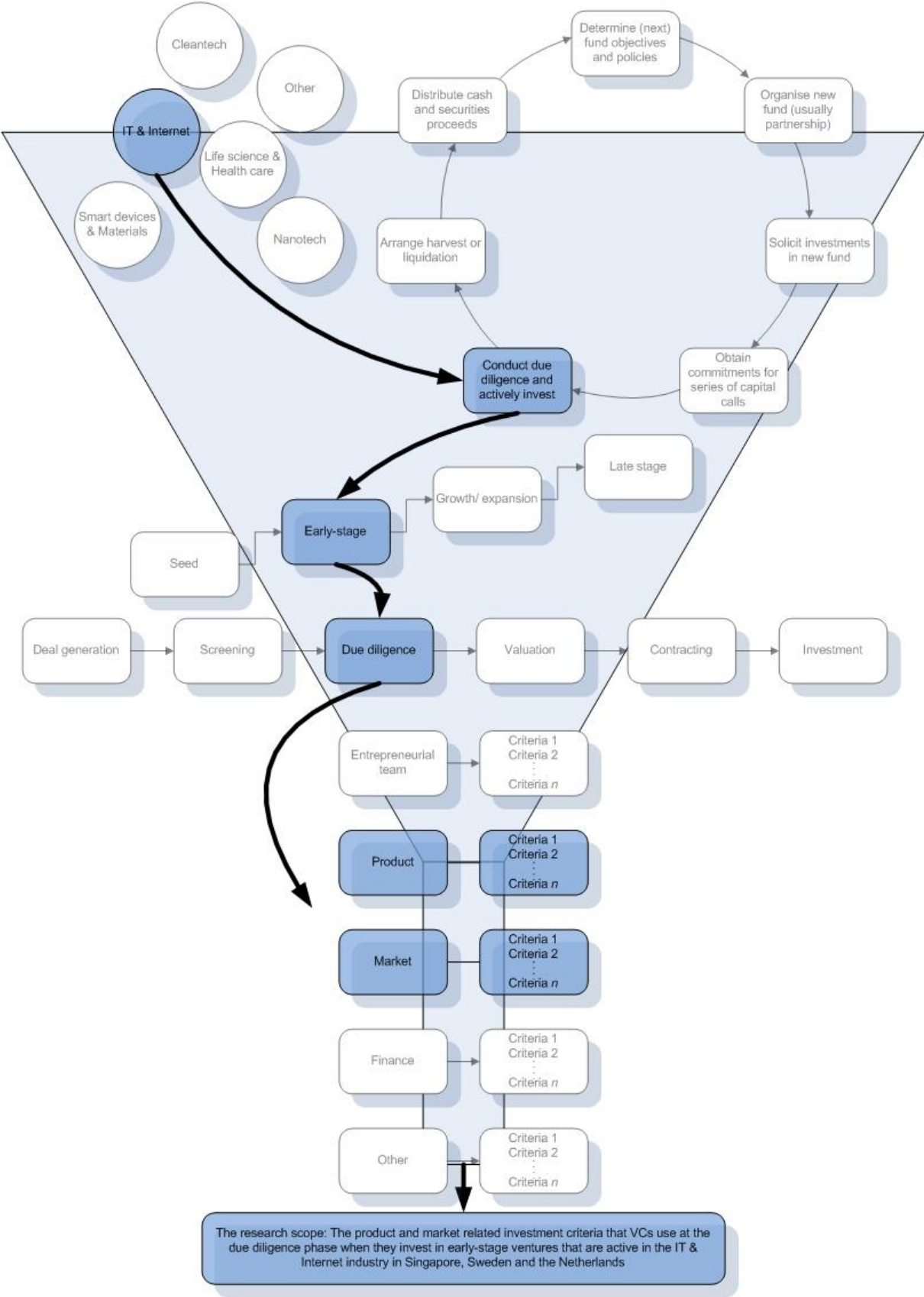


Figure 8: Schematic view of the focus areas of this research.

Appendix III: Preliminary questionnaire

Please fill in the questions below. The grey fields indicate that an open answer should be given there. Thank you for your time and effort. Your answers will be kept confidential.

1. General information								
1.1 Name		<input type="radio"/> Mr	<input type="radio"/> Ms	<input type="radio"/> Mrs				
1.2 Function								
1.3 Email adress								
1.4 Phone number								
1.5 Company name								
1.6 Website								
2. Company and portfolio								
2.1 What is the ownership type of your company?	<input type="radio"/> Independent Quoted	<input type="radio"/> Independent Private	<input type="radio"/> University Related	<input type="radio"/> Bank Related	<input type="radio"/> Corporate	<input type="radio"/> Private Incubator	<input type="radio"/> Public Incubator	<input type="radio"/> Informed Investor
2.2 In which stage of the investment cycle does your company invest?	<input type="checkbox"/> Seed	<input type="checkbox"/> Early-stage	<input type="checkbox"/> Expansion	<input type="checkbox"/> Replacement Capital	<input type="checkbox"/> Buy-out/Buy-in	<input type="checkbox"/> Other, namely		
2.3 What is your company's industry focus?	<input type="checkbox"/> IT & Internet	<input type="checkbox"/> Life Sciences & Healthcare	<input type="checkbox"/> Sustainable energy & Cleantech	<input type="checkbox"/> Micro & Nano	<input type="checkbox"/> Smart Devices & Materials	<input type="checkbox"/> Other, namely...		
2.4 What is your company's geographical scope? <small>Please assign weights to regional, national and international so that it sums up to 100%.</small>	Regional		%					
	National		%					
	International		%					
	Total 100%		0					
2.5 What is the size of your company's portfolio as on December 2009?		<input type="radio"/> EUR	<input type="radio"/> USD	<input type="radio"/> SEK	<input type="radio"/> SGD			
2.6 What is the average deal size of your companies current portfolio of ventures?	Between		and		<input type="radio"/> EUR	<input type="radio"/> USD	<input type="radio"/> SEK	<input type="radio"/> SGD
2.7 What is your company's expected return on investment?		%						

The following questions focus on proposals in the due diligence phase ('invest or not invest') in your early stage (seed and start-up) investment decisions in the IT & Internet industry

3. Investment evaluation criteria								
3.1 What is the average number of proposals that your company is currently presented with per month before any investigation takes place?								
3.2 What is the average number of proposals that your company is currently presented with per month when the 'invest or not invest decision' is made?								
3.3 What percentage of the proposals mentioned in 3.2 is rejected?		%						
3.4 Which investment criteria do you use? <i>Please fill in as much criteria as possible in the first column</i>	Criterion:							
	1.							
	2.							
	3.							
	4.							
	5.							
	6.							
	7.							
	8.							
	9.							
	10.							
	...							
4. Strategic management style								
4.1 Which of the following statements best describe the strategic management style used by your company with respect to your investee companies?	<input type="radio"/> Our company participates in and influences the development of business strategy of the firm by establishing a planning and process and contributing by strategic thinking. Also, our company places less emphasis on financial controls and performance budgets are set flexibly, and reviewed within the context of the long-term progress							
	<input type="radio"/> Our company is concerned with the plans of investee business units, but believes in the autonomy for business. Plans are reviewed in a formal planning process but our company does not advocate strategies or interfere with major decisions. Control is maintained by the use of financial targets and strategic objectives. These are agreed with our company, and business managers are expected to meet standards							
	<input type="radio"/> There are no long-term planning systems and no planning documents. Our company limits its role to approving investments and budgets, an monitoring performance. Targets are expected to be stretching and once they are agreed, they become part of a 'contract' between our company and the investee.							

Thank you very much for your time and effort. Please send your questionnaire to me at t.j.mensink@student.utwente.nl. Best regards, Thomas Mensink

Figure 9: The preliminary questionnaire. The last question about the strategic management style of the VC with respect to the entrepreneurial venture is based on the question from the questionnaire of Zutshi et al. (1999, p. 22).

Appendix IV: Final questionnaire

Please fill in the questions below. Thank you for your time and effort. Your answers will be kept confidential.

1. General information					
1.1 Name					
1.2 Company name					
1.3 Can I report your company name in the 'Participating companies' list of my paper?	<input type="checkbox"/> Yes	<input type="checkbox"/> No, my company would like to stay anonymous			
1.4 Would you like to receive a digital copy of the final report?	<input type="checkbox"/> Yes	<input type="checkbox"/> No			
The following questions focus on investment criteria in the due diligence phase (Invest or not invest) in your early stage investment decisions in the IT & Internet industry					
2. Investment criteria					
2.1 Importance of the investment criteria Please indicate the extent to which you use the following criteria for evaluating a venture?	1. Irrelevant - Not a factor in the decision-making process 2. Unimportant - Of little influence in the decision-making process 3. Desirable - A factor which improves the likelihood of investment 4. Important - A factor which must be present in order for an investment to take place, unless other				
The entrepreneur's personality					
Capable of sustained intense effort	<input type="checkbox"/> Irrelevant	<input type="checkbox"/> Unimportant	<input type="checkbox"/> Desirable	<input type="checkbox"/> Important	<input type="checkbox"/> Essential
Able to evaluate and react to risk well	<input type="checkbox"/> Irrelevant	<input type="checkbox"/> Unimportant	<input type="checkbox"/> Desirable	<input type="checkbox"/> Important	<input type="checkbox"/> Essential
Ability to articulate well when discussing the venture	<input type="checkbox"/> Irrelevant	<input type="checkbox"/> Unimportant	<input type="checkbox"/> Desirable	<input type="checkbox"/> Important	<input type="checkbox"/> Essential
Attends to detail	<input type="checkbox"/> Irrelevant	<input type="checkbox"/> Unimportant	<input type="checkbox"/> Desirable	<input type="checkbox"/> Important	<input type="checkbox"/> Essential
Has a personality compatible with mine	<input type="checkbox"/> Irrelevant	<input type="checkbox"/> Unimportant	<input type="checkbox"/> Desirable	<input type="checkbox"/> Important	<input type="checkbox"/> Essential
The entrepreneur's experience					
Thoroughly familiar with the market targeted by venture	<input type="checkbox"/> Irrelevant	<input type="checkbox"/> Unimportant	<input type="checkbox"/> Desirable	<input type="checkbox"/> Important	<input type="checkbox"/> Essential
Demonstrated leadership ability in past	<input type="checkbox"/> Irrelevant	<input type="checkbox"/> Unimportant	<input type="checkbox"/> Desirable	<input type="checkbox"/> Important	<input type="checkbox"/> Essential
Has a track record relevant to venture	<input type="checkbox"/> Irrelevant	<input type="checkbox"/> Unimportant	<input type="checkbox"/> Desirable	<input type="checkbox"/> Important	<input type="checkbox"/> Essential
The entrepreneur was referred to me by a trustworthy source	<input type="checkbox"/> Irrelevant	<input type="checkbox"/> Unimportant	<input type="checkbox"/> Desirable	<input type="checkbox"/> Important	<input type="checkbox"/> Essential
I am already familiar with the entrepreneur's reputation	<input type="checkbox"/> Irrelevant	<input type="checkbox"/> Unimportant	<input type="checkbox"/> Desirable	<input type="checkbox"/> Important	<input type="checkbox"/> Essential
Characteristics of the product or service					
The product is new, unique, and has substantial innovative content	<input type="checkbox"/> Irrelevant	<input type="checkbox"/> Unimportant	<input type="checkbox"/> Desirable	<input type="checkbox"/> Important	<input type="checkbox"/> Essential
A strategy is available to protect the product's uniqueness	<input type="checkbox"/> Irrelevant	<input type="checkbox"/> Unimportant	<input type="checkbox"/> Desirable	<input type="checkbox"/> Important	<input type="checkbox"/> Essential
The product or technology has IP protection	<input type="checkbox"/> Irrelevant	<input type="checkbox"/> Unimportant	<input type="checkbox"/> Desirable	<input type="checkbox"/> Important	<input type="checkbox"/> Essential
The technology provides a sustainable competitive edge	<input type="checkbox"/> Irrelevant	<input type="checkbox"/> Unimportant	<input type="checkbox"/> Desirable	<input type="checkbox"/> Important	<input type="checkbox"/> Essential
The product is difficult to copy	<input type="checkbox"/> Irrelevant	<input type="checkbox"/> Unimportant	<input type="checkbox"/> Desirable	<input type="checkbox"/> Important	<input type="checkbox"/> Essential
The product has an evolving innovation	<input type="checkbox"/> Irrelevant	<input type="checkbox"/> Unimportant	<input type="checkbox"/> Desirable	<input type="checkbox"/> Important	<input type="checkbox"/> Essential
The product has a disruptive innovation	<input type="checkbox"/> Irrelevant	<input type="checkbox"/> Unimportant	<input type="checkbox"/> Desirable	<input type="checkbox"/> Important	<input type="checkbox"/> Essential
The technology is scalable	<input type="checkbox"/> Irrelevant	<input type="checkbox"/> Unimportant	<input type="checkbox"/> Desirable	<input type="checkbox"/> Important	<input type="checkbox"/> Essential
The technology is proven and validated	<input type="checkbox"/> Irrelevant	<input type="checkbox"/> Unimportant	<input type="checkbox"/> Desirable	<input type="checkbox"/> Important	<input type="checkbox"/> Essential
The product has been developed to the point of a functioning prototype	<input type="checkbox"/> Irrelevant	<input type="checkbox"/> Unimportant	<input type="checkbox"/> Desirable	<input type="checkbox"/> Important	<input type="checkbox"/> Essential
The product is ready to market or has short time to market	<input type="checkbox"/> Irrelevant	<input type="checkbox"/> Unimportant	<input type="checkbox"/> Desirable	<input type="checkbox"/> Important	<input type="checkbox"/> Essential
The product can be adopted by customers without a significant behavioural change	<input type="checkbox"/> Irrelevant	<input type="checkbox"/> Unimportant	<input type="checkbox"/> Desirable	<input type="checkbox"/> Important	<input type="checkbox"/> Essential
The product enjoys demonstrated market acceptance	<input type="checkbox"/> Irrelevant	<input type="checkbox"/> Unimportant	<input type="checkbox"/> Desirable	<input type="checkbox"/> Important	<input type="checkbox"/> Essential
The product solves a painful problem of a customer	<input type="checkbox"/> Irrelevant	<input type="checkbox"/> Unimportant	<input type="checkbox"/> Desirable	<input type="checkbox"/> Important	<input type="checkbox"/> Essential
The product is involved in the core business of the customer	<input type="checkbox"/> Irrelevant	<input type="checkbox"/> Unimportant	<input type="checkbox"/> Desirable	<input type="checkbox"/> Important	<input type="checkbox"/> Essential
The product is easy to understand and communicate	<input type="checkbox"/> Irrelevant	<input type="checkbox"/> Unimportant	<input type="checkbox"/> Desirable	<input type="checkbox"/> Important	<input type="checkbox"/> Essential
The product performance is superior to competitors' products	<input type="checkbox"/> Irrelevant	<input type="checkbox"/> Unimportant	<input type="checkbox"/> Desirable	<input type="checkbox"/> Important	<input type="checkbox"/> Essential
The product is consistent with corporate strategy of my company	<input type="checkbox"/> Irrelevant	<input type="checkbox"/> Unimportant	<input type="checkbox"/> Desirable	<input type="checkbox"/> Important	<input type="checkbox"/> Essential
The product is resistant to economic cycles	<input type="checkbox"/> Irrelevant	<input type="checkbox"/> Unimportant	<input type="checkbox"/> Desirable	<input type="checkbox"/> Important	<input type="checkbox"/> Essential

Characteristics of the market (incl. value proposition and revenue model)					
The target market is clear and can be defined	<input type="checkbox"/> Irrelevant	<input type="checkbox"/> Unimportant	<input type="checkbox"/> Desirable	<input type="checkbox"/> Important	<input type="checkbox"/> Essential
The entrepreneur can demonstrate a market demand	<input type="checkbox"/> Irrelevant	<input type="checkbox"/> Unimportant	<input type="checkbox"/> Desirable	<input type="checkbox"/> Important	<input type="checkbox"/> Essential
The entrepreneur can demonstrate a market gap	<input type="checkbox"/> Irrelevant	<input type="checkbox"/> Unimportant	<input type="checkbox"/> Desirable	<input type="checkbox"/> Important	<input type="checkbox"/> Essential
The venture is in a dynamic, disruptive market with attractive patterns	<input type="checkbox"/> Irrelevant	<input type="checkbox"/> Unimportant	<input type="checkbox"/> Desirable	<input type="checkbox"/> Important	<input type="checkbox"/> Essential
The target market has a large growth potential	<input type="checkbox"/> Irrelevant	<input type="checkbox"/> Unimportant	<input type="checkbox"/> Desirable	<input type="checkbox"/> Important	<input type="checkbox"/> Essential
The implied growth rate between the ventures' size today and in 3-5 years is realistic	<input type="checkbox"/> Irrelevant	<input type="checkbox"/> Unimportant	<input type="checkbox"/> Desirable	<input type="checkbox"/> Important	<input type="checkbox"/> Essential
The venture has a large growth potential	<input type="checkbox"/> Irrelevant	<input type="checkbox"/> Unimportant	<input type="checkbox"/> Desirable	<input type="checkbox"/> Important	<input type="checkbox"/> Essential
There is a large total available market	<input type="checkbox"/> Irrelevant	<input type="checkbox"/> Unimportant	<input type="checkbox"/> Desirable	<input type="checkbox"/> Important	<input type="checkbox"/> Essential
The total available market can be benchmarked for an accurate prediction of the size	<input type="checkbox"/> Irrelevant	<input type="checkbox"/> Unimportant	<input type="checkbox"/> Desirable	<input type="checkbox"/> Important	<input type="checkbox"/> Essential
The venture is able to (know how to) defend the market in 2-3 years	<input type="checkbox"/> Irrelevant	<input type="checkbox"/> Unimportant	<input type="checkbox"/> Desirable	<input type="checkbox"/> Important	<input type="checkbox"/> Essential
There is little threat of competition during the first 2-3 years	<input type="checkbox"/> Irrelevant	<input type="checkbox"/> Unimportant	<input type="checkbox"/> Desirable	<input type="checkbox"/> Important	<input type="checkbox"/> Essential
The product has the competitive advantage to be no. 1 or 2 in the market	<input type="checkbox"/> Irrelevant	<input type="checkbox"/> Unimportant	<input type="checkbox"/> Desirable	<input type="checkbox"/> Important	<input type="checkbox"/> Essential
An attractive position and/ or large potential market share can be claimed in the market	<input type="checkbox"/> Irrelevant	<input type="checkbox"/> Unimportant	<input type="checkbox"/> Desirable	<input type="checkbox"/> Important	<input type="checkbox"/> Essential
The product is scalable across geographies and has international potential	<input type="checkbox"/> Irrelevant	<input type="checkbox"/> Unimportant	<input type="checkbox"/> Desirable	<input type="checkbox"/> Important	<input type="checkbox"/> Essential
The venture can use its customer's international network to enter new markets	<input type="checkbox"/> Irrelevant	<input type="checkbox"/> Unimportant	<input type="checkbox"/> Desirable	<input type="checkbox"/> Important	<input type="checkbox"/> Essential
(Uncertain) political factors do/ will not interfere the market	<input type="checkbox"/> Irrelevant	<input type="checkbox"/> Unimportant	<input type="checkbox"/> Desirable	<input type="checkbox"/> Important	<input type="checkbox"/> Essential
The entrepreneurs' vision on market growth is not too underestimated	<input type="checkbox"/> Irrelevant	<input type="checkbox"/> Unimportant	<input type="checkbox"/> Desirable	<input type="checkbox"/> Important	<input type="checkbox"/> Essential
The entrepreneurs' vision on market growth is not too overestimated	<input type="checkbox"/> Irrelevant	<input type="checkbox"/> Unimportant	<input type="checkbox"/> Desirable	<input type="checkbox"/> Important	<input type="checkbox"/> Essential
Competitors are present and known	<input type="checkbox"/> Irrelevant	<input type="checkbox"/> Unimportant	<input type="checkbox"/> Desirable	<input type="checkbox"/> Important	<input type="checkbox"/> Essential
Customers are known and/ or there are already some customers	<input type="checkbox"/> Irrelevant	<input type="checkbox"/> Unimportant	<input type="checkbox"/> Desirable	<input type="checkbox"/> Important	<input type="checkbox"/> Essential
I get good referrals from customers/ professionals/ competitors/ other VCs about the venture	<input type="checkbox"/> Irrelevant	<input type="checkbox"/> Unimportant	<input type="checkbox"/> Desirable	<input type="checkbox"/> Important	<input type="checkbox"/> Essential
The venture has relations with stakeholders (customers/ service providers/networks)	<input type="checkbox"/> Irrelevant	<input type="checkbox"/> Unimportant	<input type="checkbox"/> Desirable	<input type="checkbox"/> Important	<input type="checkbox"/> Essential
The venture enjoys a first mover advantage	<input type="checkbox"/> Irrelevant	<input type="checkbox"/> Unimportant	<input type="checkbox"/> Desirable	<input type="checkbox"/> Important	<input type="checkbox"/> Essential
The venture is able to maintain their first mover advantage	<input type="checkbox"/> Irrelevant	<input type="checkbox"/> Unimportant	<input type="checkbox"/> Desirable	<input type="checkbox"/> Important	<input type="checkbox"/> Essential
The venture choose the most attractive position in the value chain	<input type="checkbox"/> Irrelevant	<input type="checkbox"/> Unimportant	<input type="checkbox"/> Desirable	<input type="checkbox"/> Important	<input type="checkbox"/> Essential
The venture found a niche market	<input type="checkbox"/> Irrelevant	<input type="checkbox"/> Unimportant	<input type="checkbox"/> Desirable	<input type="checkbox"/> Important	<input type="checkbox"/> Essential
The product is different than the trend in the market	<input type="checkbox"/> Irrelevant	<input type="checkbox"/> Unimportant	<input type="checkbox"/> Desirable	<input type="checkbox"/> Important	<input type="checkbox"/> Essential
The product is conform the trend in the market	<input type="checkbox"/> Irrelevant	<input type="checkbox"/> Unimportant	<input type="checkbox"/> Desirable	<input type="checkbox"/> Important	<input type="checkbox"/> Essential
Barriers to entry should not be too difficult for the venture	<input type="checkbox"/> Irrelevant	<input type="checkbox"/> Unimportant	<input type="checkbox"/> Desirable	<input type="checkbox"/> Important	<input type="checkbox"/> Essential
The venture will stimulate an existing market	<input type="checkbox"/> Irrelevant	<input type="checkbox"/> Unimportant	<input type="checkbox"/> Desirable	<input type="checkbox"/> Important	<input type="checkbox"/> Essential
The venture will create a new market	<input type="checkbox"/> Irrelevant	<input type="checkbox"/> Unimportant	<input type="checkbox"/> Desirable	<input type="checkbox"/> Important	<input type="checkbox"/> Essential
The venture will transform the market	<input type="checkbox"/> Irrelevant	<input type="checkbox"/> Unimportant	<input type="checkbox"/> Desirable	<input type="checkbox"/> Important	<input type="checkbox"/> Essential
The venture is in an industry with which I am familiar	<input type="checkbox"/> Irrelevant	<input type="checkbox"/> Unimportant	<input type="checkbox"/> Desirable	<input type="checkbox"/> Important	<input type="checkbox"/> Essential
The product has a strong value proposition for a specific target market	<input type="checkbox"/> Irrelevant	<input type="checkbox"/> Unimportant	<input type="checkbox"/> Desirable	<input type="checkbox"/> Important	<input type="checkbox"/> Essential
The value proposition is different from competitors	<input type="checkbox"/> Irrelevant	<input type="checkbox"/> Unimportant	<input type="checkbox"/> Desirable	<input type="checkbox"/> Important	<input type="checkbox"/> Essential
The value proposition provides barriers to entry	<input type="checkbox"/> Irrelevant	<input type="checkbox"/> Unimportant	<input type="checkbox"/> Desirable	<input type="checkbox"/> Important	<input type="checkbox"/> Essential
The value proposition fits in the value chain	<input type="checkbox"/> Irrelevant	<input type="checkbox"/> Unimportant	<input type="checkbox"/> Desirable	<input type="checkbox"/> Important	<input type="checkbox"/> Essential
The product is a 'must to have' or 'need to have'	<input type="checkbox"/> Irrelevant	<input type="checkbox"/> Unimportant	<input type="checkbox"/> Desirable	<input type="checkbox"/> Important	<input type="checkbox"/> Essential
People will pay for the product	<input type="checkbox"/> Irrelevant	<input type="checkbox"/> Unimportant	<input type="checkbox"/> Desirable	<input type="checkbox"/> Important	<input type="checkbox"/> Essential
The revenue model is proven in small scale	<input type="checkbox"/> Irrelevant	<input type="checkbox"/> Unimportant	<input type="checkbox"/> Desirable	<input type="checkbox"/> Important	<input type="checkbox"/> Essential
The revenue model is proven internationally	<input type="checkbox"/> Irrelevant	<input type="checkbox"/> Unimportant	<input type="checkbox"/> Desirable	<input type="checkbox"/> Important	<input type="checkbox"/> Essential
The revenue model is attractive	<input type="checkbox"/> Irrelevant	<input type="checkbox"/> Unimportant	<input type="checkbox"/> Desirable	<input type="checkbox"/> Important	<input type="checkbox"/> Essential
The revenue model adds value	<input type="checkbox"/> Irrelevant	<input type="checkbox"/> Unimportant	<input type="checkbox"/> Desirable	<input type="checkbox"/> Important	<input type="checkbox"/> Essential
The revenue model is scalable	<input type="checkbox"/> Irrelevant	<input type="checkbox"/> Unimportant	<input type="checkbox"/> Desirable	<input type="checkbox"/> Important	<input type="checkbox"/> Essential

2.2 What category of criteria is most important to you? <i>Please assign weights to the 5 categories so that it sums up to 100.</i>					
The entrepreneur's personality					
The entrepreneur's experience					
Characteristics of the product or service					
Characteristics of the market (incl. value proposition and revenue model)					
Financial considerations					
Total 100	0				
<i>Thank you very much for your time and effort. Please send your questionnaire to me at t.j.mensink@student.utwente.nl. Best regards, Thomas Mensink</i>					

Figure 10: The final questionnaire.

Appendix V: Participating VCs

In this research a total of 46 VCs have participated, either by being interviewed (and completing the preliminary questionnaire), by completing the final questionnaire, or both. Some of these VCs agreed to be reported in this paper. They appear in Table 24 below. The rest of the VCs (14 in Singapore, 7 in Sweden, and 4 in the Netherlands) wanted to stay anonymous and are therefore not present in Table 24.

Singapore	Sweden	The Netherlands
IDEAS Ventures (Singapore) Pte Ltd Upstream Ventures Infocomm Investments Pte Ltd	Northzone Ventures Malmöhus Invest AB Nexit Ventures Rite Internet Ventures Eqvitec Partners SEB Venture Capital	Newion Investments RUG Houdstermaatschappij bv Gimv ICT Venture Value Creation and Company Byblos Ventures Prime Technology Ventures QAT Investments TIIN Capital Eventures Europe bv HENQ Invest MIND HUNTER

Table 24: Participating VCs.

Appendix VI: Product and market related criteria

Characteristics of the product or service (N = 19)
The product is new, unique, and has substantial innovative content
A strategy is available to protect the products uniqueness
The product or technology has IP protection
The technology provides a sustainable competitive edge
The product is difficult to copy
The product has an evolving innovation
The product has a disruptive innovation
The technology is scalable
The technology is proven and validated
The product has been developed to the point of a functioning prototype
The product is ready to market or has short time to market
The product can be adopted by customers without a significant behavioural change
The product enjoys demonstrated market acceptance
The product solves a painful problem of a customer
The product is involved in the core business of the customer
The product is easy to understand and communicate
The product performance is superior to competitors' products
The product is consistent with corporate strategy of my company
The product is resistant to economic cycles

Table 25: Product related investment criteria found in the preliminary questionnaire, during interviews, and in previous literature.

Characteristics of the market (incl. value proposition and revenue model) (N = 44)
The target market is clear and can be defined
The entrepreneur can demonstrate a market demand
The entrepreneur can demonstrate a market gap
The venture is in a dynamic, disruptive market with attractive patterns
The target market has a large growth potential
The implied growth rate between the ventures' size today and in 3-5 years is realistic
The venture has a large growth potential
There is a large total available market
The total available market can be benchmarked for an accurate prediction of the size
The venture is able to (know how to) defend their market in 2-3 years
There is little threat of competition during the first 2-3 years
The product has the competitive advantage to be no. 1 or 2 in the market
An attractive position and/ or large potential market share can be claimed in the market
The product is scalable across geographies and has international potential
The venture can use its customer's international network to enter new markets
(Uncertain) political factors do/ will not interfere the market
The entrepreneurs' vision on market growth is not too underestimated
The entrepreneurs' vision on market growth is not too overestimated
Competitors are present and known
Customers are known and/ or there are already some customers
I get good referrals from customers/ professionals/ competitors/ other VCs about the venture
The venture has relations with stakeholders (customers/ service providers/networks)
The venture enjoys a first mover advantage
The venture is able to maintain their first mover advantage
The venture choose the most attractive position in the value chain
The venture found a niche market
The product is different than the trend in the market
The product is conform the trend in the market

Barriers to entry should not be too difficult for the venture
The venture will stimulate an existing market
The venture will create a new market
The venture will transform the market
The venture is in an industry with which I am familiar
The product has a strong value proposition for a specific target market
The value proposition is different from competitors
The value proposition provides barriers to entry
The value proposition fits in the value chain
The product is a 'must have' or 'need to have'
People will pay for the product
The revenue model is proven in small scale
The revenue model is proven internationally
The revenue model is attractive
The revenue models adds value
The revenue model is scalable

Table 26: Market related investment criteria found in the preliminary questionnaire, during interviews, and in previous literature.

Appendix VII: The importance of investment criteria

Criteria	The Netherlands			Singapore			Sweden		
	Mean	SD	Aver.	Mean	SD	Aver.	Mean	SD	Aver.
The entrepreneur's personality									
Capable of sustained intense effort	4,17	0,72		4,45	0,52		4,10	0,74	
Able to evaluate and react to risk well	4,25	0,62		4,27	0,65		4,00	0,47	
Ability to articulate well when discussing the venture	3,75	0,75	3,68	4,09	0,83	4,02	3,30	0,82	3,60
Attends to detail	3,55	0,69		3,91	0,30		3,50	0,53	
Has a personality compatible with mine	2,67	0,98		3,36	0,81		3,10	0,88	
The entrepreneur's experience									
Thoroughly familiar with the market targeted by venture	4,50	0,52		4,45	0,69		3,90	0,88	
Demonstrated leadership ability in past	3,50	0,67		3,82	0,60		3,40	0,70	
Has a track record relevant to venture	3,83	0,94	3,45	3,27	0,79	3,47	3,20	1,03	3,20
The entrepreneur was referred to me by a trustworthy source	2,83	1,03		3,09	0,94		2,90	1,20	
I am already familiar with the entrepreneur's reputation	2,58	0,67		2,73	0,47		2,56	1,24	
Characteristics of the product or service and business model									
The product is new, unique, and has substantial innovative content	3,75	0,62		3,55	1,04		3,60	0,97	
A strategy is available to protect the products uniqueness	3,42	0,51		4,45	0,69		3,50	0,53	
The product or technology has IP protection	2,92	0,90		3,55	0,82		3,10	0,57	
The technology provides a sustainable competitive edge	4,25	0,75		4,45	0,52		4,40	0,84	
The product is difficult to copy	3,67	0,49		4,09	0,70		3,50	0,53	
The product has an evolving innovation	3,67	0,78		3,82	0,60		3,20	0,92	
The product has a disruptive innovation	3,17	1,11		3,64	0,67		2,89	0,93	
The technology is scalable	4,67	0,49		4,64	0,50		3,90	0,74	
The technology is proven and validated	3,83	0,83		3,45	1,04		3,30	0,48	
The product has been developed to the point of a functioning prototype	4,17	0,83	3,69	3,55	1,29	3,75	3,60	1,26	3,41
The product is ready to market or has short time to market	4,08	1,00		3,55	1,04		3,90	0,88	
The product can be adopted by customers without a significant behavioural change	3,67	0,65		3,55	0,82		3,80	0,42	
The product enjoys demonstrated market acceptance	3,67	0,89		3,36	1,12		3,10	0,57	
The product solves a painful problem of a customer	4,25	0,62		4,00	0,63		4,00	0,67	
The product is involved in the core business of the customer	3,50	1,00		3,36	0,81		2,60	0,84	
The product is easy to understand and communicate	3,42	0,90		3,91	0,70		3,30	0,67	
The product performance is superior to competitors' products	4,08	0,79		3,82	0,75		3,60	0,70	
The product is consistent with corporate strategy of my company	2,83	0,83		3,18	1,25		2,60	1,07	

The product is resistant to economic cycles	3,00	0,63	3,27	0,65	2,80	0,63
Characteristics of the market						
The target market is clear and can be defined	3,92	0,67	4,36	0,67	3,89	0,60
The entrepreneur can demonstrate a market demand	4,67	0,65	4,27	0,79	4,22	0,44
The entrepreneur can demonstrate a market gap	3,55	0,82	3,91	0,70	3,33	1,00
The venture is in a dynamic, disruptive market with attractive patterns	3,33	0,98	3,73	0,79	3,00	0,87
The target market has a large growth potential	4,67	0,49	4,45	0,52	3,78	0,83
The implied growth rate between the ventures' size today and in 3-5 years is realistic	4,33	0,49	4,00	0,89	4,22	0,67
The venture has a large growth potential	4,58	0,51	4,45	0,69	4,22	0,67
There is a large total available market	4,50	0,67	4,27	0,65	4,11	0,33
The total available market can be benchmarked for an accurate prediction of the size	3,33	0,65	3,55	0,52	3,33	0,50
The venture is able to (know how to) defend their market in 2-3 years	3,83	0,39	4,09	0,70	3,78	0,67
There is little threat of competition during the first 2-3 years	2,83	0,39	3,09	1,04	2,89	0,78
The product has the competitive advantage to be no. 1 or 2 in the market	3,83	0,72	3,91	0,54	3,56	0,73
An attractive position and/ or large potential market share can be claimed in the market	4,00	0,74	4,09	0,70	3,44	0,73
The product is scalable across geographies and has international potential	4,25	0,97	4,36	0,81	4,00	0,71
The venture can use its customer's international network to enter new markets	3,33	0,65	3,36	0,81	3,00	0,50
(Uncertain) political factors do/ will not interfere the market	3,17	0,94	3,09	0,54	3,44	0,73
The entrepreneurs' vision on market growth is not too underestimated	3,27	1,01	3,55	0,69	3,44	1,01
The entrepreneurs' vision on market growth is not too overestimated	3,45	1,04	3,55	0,93	3,00	0,71
Competitors are present and known	3,50	1,17	3,55	1,04	3,22	0,97
Customers are known and/ or there are already some customers	4,00	0,74	3,36	1,03	3,89	0,93
I get good referrals from customers/ professionals/ competitors/ other VCs about the venture	3,50	0,90	3,36	0,81	3,67	1,00
The venture has relations with stakeholders (customers/ service providers/networks)	3,50	1,08	3,50	0,85	3,75	0,89
The venture enjoys a first mover advantage	3,08	0,67	3,18	0,75	2,67	1,00
The venture is able to maintain their first mover advantage	3,42	0,67	3,60	0,84	3,11	1,17
The venture choose the most attractive position in the value chain	3,58	0,67	3,55	0,52	3,56	0,73
The venture found a niche market	2,64	0,92	3,18	0,87	3,22	0,83
The product is different than the trend in the market	1,92	0,79	2,82	1,08	2,13	1,25
The product is conform the trend in the market	2,83	1,11	3,00	0,94	2,63	0,92
Barriers to entry should not be too difficult for the venture	3,00	1,28	3,10	0,88	3,13	0,83
The venture will stimulate an existing market	3,00	0,85	3,09	0,70	3,43	0,98
The venture will create a new market	2,33	0,78	2,91	0,70	2,38	0,92
The venture will transform the market	2,75	0,62	3,27	0,79	2,50	1,20
The venture is in an industry with which I am familiar	4,00	1,10	3,36	1,21	3,00	0,50

The product has a strong value proposition for a specific target market	4,58	0,67		4,27	1,01		4,22	0,83
The value proposition is different from competitors	3,92	0,67		4,00	0,89		3,56	0,88
The value proposition provides barriers to entry	3,50	0,80		3,82	0,60		3,89	0,33
The value proposition fits in the value chain	3,64	0,81		4,18	0,60		3,78	0,67
The product is a 'must have' or 'need to have'	4,33	0,98		3,91	0,83		3,89	0,78
People will pay for the product	4,64	0,50		4,27	1,01		4,22	1,30
The revenue model is proven in small scale	4,08	0,67		3,36	1,03		3,78	0,83
The revenue model is proven internationally	2,83	0,72		2,91	0,70		3,11	0,93
The revenue model is attractive	4,42	0,51		4,45	0,52		4,11	0,78
The revenue models adds value	4,45	0,52		4,09	0,70		3,67	1,22
The revenue model is scalable	4,83	0,39		4,55	0,52		3,89	0,78
Financial considerations								
I require a return equal to at least 10 times my investment within 5-10 years	4,08	0,90		4,00	0,89		3,56	1,01
I require an investment that can be easily made liquid (e.g., taken public or acquired)	3,17	1,11	3,56	3,91	0,70	3,82	3,78	0,97
I require a return equal to at least 10 times my investment within at least 5 years	3,42	0,67		3,55	0,82		2,78	0,83

Table 27: The importance of all 76 investment criteria.

Appendix VIII: Case studies

In this appendix eight real life cases will be presented to provide more specific insights in the investment decision process of VCs. Because of confidentiality reasons the company names of the VCs and ventures are made anonymous. The product and market related criteria that are mentioned in the case are also ‘tagged’. In addition, it is indicated between brackets whether the criteria influenced the decision of the VC to (not) invest positively or negatively. The fact that the criteria are mentioned does not necessarily mean that the venture scored well on these criteria. In some cases, failing these criteria caused the VC to reject the proposal.

Case 1: Cloud computing

Criteria mentioned (positive): There is a large total available market, The target market has a large growth potential, The product has a strong value proposition for a specific target market, The product has the competitive advantage to be no. 1 or 2 in the market, The technology provides a sustainable competitive edge, The venture will stimulate an existing market, Customers are known and/ or there are already some customers, The revenue model is proven in small scale.

Criteria mentioned (negative): N/A.

Venture capital funding: Yes.

Venture A offers web-based, pre-packaged cloud computing solutions for business process integration. The company has developed solutions in logistics, purchasing and travel. Venture A’s technologies can integrate and automate their customers’ business processes in the value network made up of their partners and make real-time business information visible end-to-end.

Last year, VC 1a and VC 1b co-invested a total amount of approximately 4 million euro in Venture A. Recently, Venture A received the second round venture capital funding to accelerate its expansion. VC 1a mentioned the market size and growth, business model, sustainable competitive advantage, and a strong management team as key criteria. The entrepreneurial team should know their industry well and should have good experience and network in that industry. VC 1b mentioned the sustainable technology, a huge market, good people and an already existing market as key criteria. VC 1b finds the entrepreneurs so important that they check them thoroughly, including a psychological test, before they decide whether to invest or not.

The founders of Venture A are very experienced entrepreneurs with good track records, who have had venture capital funding before at earlier ventures. At the moment they received the venture capital funding, the venture already had a proven business model (because they had more than 100 customers), and was profitable. The entrepreneurs had already invested a lot of time and money into the venture. The cloud computing market has a lot of potential and VC

1b finds that Venture A has a unique offering in a growing global market. There were all reasons for VC 1a and VC 1b to invest.

It took the venture around 1.5 years from the start to the moment they got the venture capital financing. Before the venture capital, they had a growth rate of 20%. At this moment, that number has increased to 45% and the forecast is that it will be 78%. Venture A has several offices across the globe and they expect to make an exit in two to three years.

Case 2: Image search

Criteria mentioned (positive): The product is new, unique, and has substantial innovative content, Competitors are present and known, The technology is proven and validated, The product is ready to market or has short time to market.

Criteria mentioned (negative): The venture will create a new market, The product has a disruptive innovation, The product has a strong value proposition for a specific target market. The product performance is superior to competitors' products.

Venture capital funding: No.

The entrepreneur that founded Venture B has developed a technology that can be used to categorise photographs that are stored in online web albums. The entrepreneur has created an innovative algorithm that is different from algorithms that other players in the market, like Picasa, use. The technology is validated and is ready-to-market. Venture B contacted VC 2 for venture capital. VC 2 decided not to invest for various reasons. First, although the technology might be new, the idea of categorising photos is not new. Therefore this technology will not give the disruptive innovation jump in the market. Second, VC 2 found that the technology of Venture B did not have a strong value proposition. This means that the extra benefits that the technology of Venture B can offer customers – compared to the technology of for example Picasa – are too small.

Despite failing the product related criteria mentioned above, VC 2 was convinced of the capabilities of the entrepreneur of Venture B. He advised the entrepreneur to do more research about image search and create a new technology for that new emerging market. In short, image search implies a technology that can be used to find pictures based on the characteristics of the content of the picture. This technology does not look at the name or the tags that the publisher attached to the image, but at what can actually be seen *in* the image. If the entrepreneurs of Venture B will develop a technology that can offer a strong value proposition VC 2 will again consider investing.

Case 3: Configuration management software

Criteria mentioned (positive): The product is new, unique, and has substantial innovative content, The product has a disruptive innovation, The technology provides a sustainable competitive edge, A strategy is available to protect the products uniqueness, The technology is scalable, The product is scalable across geographies and has international potential, The product or technology has IP protection, The product solves a painful problem of a customer.

Criteria mentioned (negative): N/A.

Venture capital funding: Yes.

Venture C is a producer of configuration management software. Venture C's customers are developers of networking software in carrier deployments and enterprise IT environments. They can use the technology of Venture C to build their network management systems in a fast and efficient way. Venture C gained the first round venture capital financing in 2005 from VC 3.

For VC 3, the management team is the most important criterion when they evaluate new ventures. Besides the management team, VC 3 also looks at the product (is it a unique, disruptive technology? does it give barriers to entry? is there a strategy to protect the uniqueness of the product?) and the scalability of the product. There should be an international market potential. Patents themselves are not very important for VC 3, but the technology should be "good enough to be possibly patented".

The core founding team of consisted of experienced entrepreneurs who had successful start-ups before with the same team. This team also included someone of VC 3. Because of the good connections with VC 3 and the proven track record of the management team, gaining the venture capital funding was not too hard. The venture capital funding process took only about three months, while the negotiations about the investment (term) sheet took most of the time. VC 3 had enough confidence in the management team that they spent little time on analysis about the product and market characteristics of Venture C.

Since 2005, Venture C addresses a global market with several offices in the U.S., Europe and Israel and has achieved a market growth of 30% each year. The product still addresses the same problems as it did in 2005, but the features have changed. The involvement of VC 3 in Venture C (VC 3 has a board seat) is experienced as positive and very supportive.

Case 4: Social network space

Criteria mentioned (positive): The product is new, unique, and has substantial innovative content.

Criteria mentioned (negative): The product has the competitive advantage to be no. 1 or 2 in the market, People will pay for the product, The venture is in a dynamic, disruptive market with attractive patterns, The venture is able to (know how to) defend their market in 2-3 years, An attractive position and/ or large potential market share can be claimed in the market, The value proposition provides barriers to entry.

Venture capital funding: No.

At the beginning of 2010, VC 4 read the business proposal of Venture D. Venture D has created an online social network space and was looking for venture capital to really “get off the ground”. The social network space was new and different compared to other social network spaces. VC 4 liked the founder and mentioned that Venture D had a solid entrepreneurial team. Despite that, VC 4 decided not to invest in Venture D. After extensive research VC 4 was not “comfortable enough” that the social network space of Venture D would create “a sustainable advantage”. VC 4 also expected that market traction – to secure one or multiple paying customers – was hard to establish for Venture D because of the rapid developments in the social network industry. Therefore, VC 4 argued, the market position of the social network space of Venture D would be “very hard to defend” in short or middle term. VC 4 would have invested if Venture D could prove to have more barriers of entry that would prevent competitors to enter that specific social network space market.

Case 5: Study choice platform

Criteria mentioned (positive): The entrepreneur can demonstrate a market gap, The target market has a large growth potential, The venture has a large growth potential, An attractive position and/ or large potential market share can be claimed in the market, The revenue model adds value, The product is scalable across geographies and has international potential, The value proposition provides barriers to entry, The product is ready to market or has short time to market, The revenue model is scalable, The entrepreneur can demonstrate a market demand, There is a large total available market.

Criteria mentioned (negative): N/A.

Venture capital funding: Yes.

Since the introduction of the bachelor-master structure for higher education in Europe in 2002, it has been easier for students to switch to another university for their master study after they graduated for their bachelor study. This huge development demanded transparent information about the master studies to make it possible for student to compare them. Venture E identified a market gap and started in 2007 initially as an online study choice platform for master students. Students can use Venture E’s platform to find and compare masters at several international universities.

In the first year 70 to 100 international universities joined the study choice portal of Venture E. Venture E started to grow rapidly. In 2009 they hired their first full time employees and

moved to a new office. They became market leader of master choice portals and made their money by selling advertisements on their high traffic website.

In order to grow even larger, Venture E chose to expand their number of verticals. Besides the master study portal, they also wanted to develop a bachelor, PhD, and scholarship portal. To realise this strategic plan fast, they decided to attract venture capital; they wanted not only the money but also the network and experience of the VC. Venture E got offers from several VCs, but eventually they signed the deal with VC 5 because of the relevant experience regarding web usability, advertising effectiveness and track record that VC 5 could bring to the table.

VC 5 mentioned various investment criteria that they use to evaluate venture proposals. For example, they look at the idea more than the entrepreneurs. Also, they evaluate if there is significant growth potential of the venture and the market. VC 5 praises the worldwide ambition of Venture E as well. Furthermore, VC 5 mentioned that the barriers to entry are not that important (neither is IP), but that speed is crucial. At last, VC 5 likes ventures with a product that could make a smart commercial introduction and has a scalable revenue model. The entrepreneurs of Venture E did not have that much entrepreneurial experience, but they could demonstrate a market demand, a large total available market, and growth potential.

VC 5 helped Venture E to create a strategy and a vision that they could use in their long term decision making. Venture E says that they stick more to the plan now. Also, in consultation with VC 5, the revenue model changed from advertisement based to a more result based model like lead generation fees (an amount per interested student). Today, Venture E is the largest study choice platform in Europe, serving hundreds of thousands of visitors each month.

Case 6: Online news portal

Criteria mentioned (positive): The entrepreneur can demonstrate a market demand, The revenue model is proven in small scale, There is a large total available market.

Criteria mentioned (negative): The revenue model adds value, The product is scalable across geographies and has international potential, An attractive position and/ or large potential market share can be claimed in the market, There is little threat of competition during the first 2-3 years, The product has the competitive advantage to be no. 1 or 2 in the market, The revenue model is scalable, The target market has a large growth potential, The implied growth rate between the ventures' size today and in 3-5 years is realistic.

Venture capital funding: No.

Venture F has developed a large online news portal in Indonesia. The business model relies on the advertisements that are published on the website. Venture F wants to expand their business to other countries in Asia and is looking for venture capital to do so. Venture F was

introduced to VC 6 by a connection in the large business network of VC 6. Although Venture F already has some revenues, a proven (domestic) market demand, and a large total available market VC 6 decided not to invest. VC 6 mentioned that Venture F has a low market dominance in the international market because the dominant players like Yahoo are also very active and successful in the news portal industry. Therefore VC 6 thought it would be very hard to scale the news portal of Venture F to international markets. Furthermore, VC 6 did not believe in the business model that relies on advertisements. For that reason VC 6 expected that the existing business model could not grow further in the domestic market. According to VC 6, Venture F has a good brand that can be used to start “new verticals” to expand their businesses. VC 6 advised to look at starting related websites like recruiting or travel sites.

Case 7: E-cards

Criteria mentioned (positive): There is little threat of competition during the first 2-3 years, The venture will create a new market, The target market has a large growth potential, The product is new, unique, and has substantial innovative content, The product is ready to market or has short time to market.

Criteria mentioned (negative): The product enjoys demonstrated market acceptance, The entrepreneur can demonstrate a market demand.

Venture capital funding: Yes, only first round.

Around the year 2000, Venture G has developed a technology to send online e-cards. In that year there were no or only a few competitors that also offered online e-card services. Because the internet market was upcoming, the management team was good, and the product was unique and ready-to-market VC 7 decided to invest. The first round funding was provided immediately and VC 7 and Venture G agreed to transfer the later round funding if the milestones – a certain number of customers – would be achieved. As Venture G had a business-to-consumer business model, a lot of individual customers were needed to boost the venture’s success.

However, the timing of the product-market combination could have been better. Maybe because internet was not so widely used as it is nowadays, but the e-card product did not enjoy a demonstrated market acceptance in that time. The market demand was behind the milestone number. Therefore VC 7 did not provide the second (or third) round funding, and Venture G became a ‘living dead’ in VC 7’s portfolio. VC 7 did not succeed to sell Venture G to another (larger) company.

These days, a lot of successful companies are active in the online e-card market. This demonstrates that the success potential of a venture or technology also depends on the moment in time and the timing of product-market combination.

Case 8: Digital photo authentication system

Criteria mentioned (positive): The product is new, unique, and has substantial innovative content, The product performance is superior to competitors' products, The product has been developed to the point of a functioning prototype, The technology is proven and validated, The entrepreneur can demonstrate a market demand.

Criteria mentioned (negative): N/A.

Venture capital funding: No.

Venture H has developed a digital photo authentication system that can be used to authenticate digital images. The technology can identify manipulated photos by allowing editors to view changes made to digital images. The digital photo authentication system is therefore a technical solution to make transparent whether the images are authentic and not manipulated. The technology developed by Venture H is different and new compared to other technologies in the field of photo authentication.

Venture H was introduced to VC 8 by referral. According to the evaluation of VC 8, the entrepreneurial team of Venture H was “average” and there was a “proved market”. However, VC 8 decided not to invest because Venture H did not want to share the technical details of the technology with VC 8. Therefore VC 8 did not know enough about the means and methods of Venture H and if the technology was validated. The attitude of the entrepreneur to keep the technology secret caused that VC 8 did not want to invest.