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Overruling uncertainty

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A study of venture capital decision making

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ABSTRACT

This thesis was initiated due to the fact that venture capitalists' often are the gatekeeper in the funding process of ventures and their impact on fuelling economic growth is likely to increase as the entrepreneurial spirit drives the global economy. In order to find suitable success ventures and develop them from being a promising business idea into a profitable investment, venture capitalists must have a decision making process that contribute to this objective. The fulfilment of this objective is dependent on the VCs ability to manage and facilitate the decision making process.

However, when looking at the theories of venture capital decision making, we realised that the there was a need of getting a more comprehensive understanding of how the process handled the problem of uncertainty in the assessed ventures, as well as connecting the criteria to the specific stages of the decision making process.

In the study it was concluded that the contingency theory are not totally able to explain the context of a decision making process. Although, it was clarified that venture capital firms use a more or less rational strategy to screen and assess the ventures that apply for venture capital. The decision making process in venture capital firms cannot be said to be the most suitable way of finding the optimal investment objects, however, we believe that it could be seen as the optimal way of finding suitable investment objects.

Keywords: Venture capital, decision making, contingency theory, uncertainty, criteria, rational, limited rationality

ACKNOWLEDGEMENTS

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Jon Larsson Martin Roosvall

Göteborg in December 2000

TABLE OF CONTENTS

INTRODUCTION

In the first chapter we will let the reader in on our secret why the chosen area is interesting to investigate and the specific problems will be presented more thoroughly. Delimitations and the disposition of the thesis will be presented at the end of this chapter.

BACKGROUND

Today, there are 200 venture capitalist firms in Sweden, which all in all together administers more than 173 billion SEK, which is three times more compared to 1993-1994 (Veckans Affärer, 2000). The number of venture capital firms has increased sharply during the 1990s, which have gained greater access to capital as a result of an upturn in the stock market, increased savings, and increased allocation of pension funds to venture capital, among other factors. Moreover, the entrepreneurial culture has spread in many different segments of the society, from students at the universities to experienced persons from the industry, which have elevated the demand for venture funding.

The booming of the Swedish venture capital market is the result of several reasons. First, the driving forces have been Internet and the technological revolution within the IT- and telecom-sector, as well as within the biotechnological companies. Furthermore, environmental conditions have made it easier to grow through new technology, deregulations and the role of globalisation. Just looking back ten years makes one realise that it was not possible to become global in just one or two years, which is possible today due to the environmental changes that have occurred in the latest years. Some years ago there were complaints about the difficulty for young companies to get VC-funding. Today, Sweden is the European leader in investing in seed and start-up stages.

Growth in today's economy, from a national as well as an international perspective, is driven to a large extent by the success of new businesses (Timmons 1994). A Swedish survey (Isaksson, 1999) showed that venture capital firms bring positive effects to growth, not only due to the fact that they provide the needed capital, but also knowledge and a wide-ranging network. The main idea of venture capitalism is to invest in small businesses, built upon a good business idea and with a high potential of future growth. By providing equity to the business, the profit from the investment is collected when exiting the investment object. In order for venture capitalists to make these kind of operations profitable, the profit should not only cover the original investment, but also losses from investments that have not been profitable.

The venture capitalist is often the gatekeeper in the funding process and their impact on fuelling economic growth is likely to increase as the entrepreneurial spirit drives the global economy. However, one must be aware of the fact that not all companies become success stories. VC-backed firms still fail at a surprisingly high rate 20% (Sandberg 1986; Timmons 1994). Additionally, another 20% of the VC's portfolio fails to provide any return to the VC. Even so, the success rate of venture capital backed ventures is significantly higher than the success rate of new ventures generally.

In order to find suitable success ventures and develop them from being a promising business idea into a profitable investment, venture capitalists must have a decision making process that contributes to this objective. The fulfilment of this objective is dependent on the VC's ability to manage and facilitate the decision making process. This is further supported by Butler et al (1993) who mean that capital investment decisions must be ranked as one of the most important forms of decisions made in our economic society. To the individual enterprise, whether public or private, the success of these decisions will affect its very survival and future prosperity.

There may be broad strategic benefits gleaned from a better understanding of their decision process. Thus, unravelling the decision making process preceding an investment decision is crucial to really understanding the underlying assumptions that constitutes the different elements of the process, which ultimately will lead to better investment decisions. Being able to study the market of venture capital firms has been a stimulating experience, since the venture capital firms constitute the foundation of the future success for companies in their early stages. Moreover, the rapid growth of the industry during the latest years has really put the industry in focus and there is a need to further investigate this segment of the economy.

PROBLEM AREA

It is well understood that start up capital to fund and develop new ventures (i.e. to be able to conduct research and development, initiate production, expanding manufacturing facilities, build reputation) is critical to the future success of these ventures. This is acknowledged by Fried & Hisrich (1994) who state that the venture capital market plays a significant role providing capital to a wide variety of enterprises.

In order to provide capital and enabling the future success of the ventures, venture capital firms' use their decision making process to gather the information needed in order to make a decision whether to reject or accept the venture proposal. However, the decision to invest is a difficult one with serious adverse selection risk. The main purpose of the VC investment decision-making process is to reduce the risk of adverse selection (Fried & Hisrich, 1994).

Adverse Selection occurs when one of the parties is better suited to determine the quality of the product or service than the other (Pindyck & Rubenfeld, 1995). In the case of the venture capitalist, this results in a difficulty for the VC to make a good prediction of the intentions of the entrepreneur. For example, the entrepreneur might have crucial information about the product or service implying that the VC should avoid investing in the particular venture. Thus, the purpose of the decision making process is to provide a tool which reveal the true facts concerning the venture in question in order to be able to make a solid investment decision. Once an investment is made, the investment is illiquid, and its success is highly dependent on a small group of managers/entrepreneurs. Significant information asymmetries allow managers to engage in opportunistic behaviour after an investment is made (Sahlman, 1988), making it all the more important that the initial decision to invest becomes a good one.

We have found different views about how successful VCs are in allocating resources. Chan (1983) and Sahlman (1990) argue that the presence of a VC encourages efficient capital allocation. Amit, Glosten & Muller (1990), though, have a more critical view, when they argue that the institutional structure of the venture capital industry, will lead to the most promising entrepreneurs not seeking venture capital financing, and they are likely to make slower progress in the development and commercialisation of emerging technologies. Further, those entrepreneurs that are backed by venture capital are less likely to succeed in developing their ventures because of their relatively low ability. Thus, if we are to know whether the venture capital market allocates resources properly, we need to understand how VCs make investment decisions.

The decision making process of the venture capitalist firms aim to assess the possibility of success or failure by evaluating the information surrounding the particular venture. Several studies have been made in trying to identify the different stages of the decision making process. The studies that have been made from a process perspective are done by Wells (1974), Tyebjee & Bruno (1984), Silver (1985) and Hall (1989) and Fried & Hisrich (1994). In general the process is conducted so that new ventures must past an initial screening, which is typically a review of the business plan. This is then followed by meetings, a due diligence phase and negotiations around the more detailed issues regarding the investment.

Previous studies in venture capitalist decision-making (Wells 1974, Tyebjee & Bruno 1984, MacMillan et al 1987 and Fried & Hisrich 1994) have focused on trying to identify the venture evaluation criteria used by the VC's. When it comes to the different evaluation criteria, which VC's base their investment decisions on, three main categories arise as the main focus of the foundation for a good investment (Wells 1974, Tyebjee & Bruno 1984 and MacMillan et al 1985 Fried & Hisrich 1994). The three categories can be summarised as (1) entrepreneurial/team capabilities, (2) product/service and market attractiveness (3) financial considerations.

However, the presented studies have not focused on trying to connect the different criteria, used to evaluate the venture proposal, with the specific steps of the decision making process. Moreover, the focus of previous studies has been on what criteria that must be fulfilled in order to succeed in receiving venture capital funding. We believe that there also are fruitful lessons on what grounds ventures are being rejected during the process. A better understanding of the criteria used by the venture capitalists in their decision making process, and how the criteria relates to the different stages of the decision making process could lead to a better understanding of the reasons why some ventures are successful in the pre-investment process and why others fail.

Thus, we would like to investigate how the decision making process and the criteria used relates in each and every step of the process. By expanding venture capitalists' awareness of the weights being attached to various criteria by their peers, and by alerting those seeking venture capital funds to potential flaws that can be rectified before submission, we hope to enhance the knowledge of evaluation criteria, used in each and every step of the decision making process, which will make the venture capital market a little more efficient.

When discussing the industry of venture capitalist firms, it is interesting to note that since most venture capitalist firms invest in ventures which have not made their entrance to the market yet, in some cases the venture does not even have the product or service fully developed. Each venture is built upon its own individual characteristics, a problem which was recognised by Fried & Hisrich (1994) when they stated that most models are generic to cover all types of VCs. In order to address this problem we aim to investigate VCs that focus on investing in the seed, start-up or the early expansion phase in the lifecycle of a venture. This is due to the fact that 58% of the investments made in 1999 were made in these stages (SVCA, 2000).

The investment decision is the decision to commit the firm's resources (capital, people, know-how etc.) to particular projects with the intention of achieving greater financial and other benefits in future years. These assets may be tangible, such as land and buildings, plant and equipment and inventories, or intangible such as investment in patents, brands, know-how and people. In the last few years the recognition of the intangible assets has increased dramatically. Internet and its "offsprings", such as e-commerce, have moved the focus toward the intangible assets. Today, in some cases the market value of a company is based upon the value of the human capital of the employees.

When studying the empirical models of the VC decision making process, we feel that the classical theory of decision making could give us an enhanced understanding when it comes to decision making and facilitating the level of uncertainty. One has to have in mind that a decision is a result of making a choice. Making a decision means that someone chooses one alternative and discards the other alternatives. Simon (1947) means that the decision making process is far removed from the economic theories of utility maximisation. The reason for this is that the decision maker does not have sufficient information about preferences and the means to reach them. The reality for decision-makers is scarcity of information and lack of ability to determine all possible outcomes. The decision-makers tend to use simple rules of thumb.

This means that decision-making is surrounded by uncertainty, i.e. uncertainty is a pre-condition for decision making (Butler et al, 1993). If there were no uncertainty as to the course of action to take, there would be no decisions to make. There may be uncertainty about preferences as to the ends to be reached or there may be uncertainties about the means of reaching those desired ends. When discussing capital investment decisions in relation to the venture capitalist industry, the investment decision is more or less based upon the intangible assets of the venture. Thus, the venture capitalist firm is investing in the patent, know-how and people believing them to be able to carry out their plans, if successful the venture capital will fulfil their operational goals.

Investing in the early stages of a company's lifecycle involves a high degree of uncertainty. This is due to the fact that the historical background of the venture, and the persons behind it, is often limited. By using classical theory in decision making we intend to investigate the contingency theory if it can explain the process of decision making in the venture capital firms, in relation to the level of uncertainty involved. We believe that the contingency theory is an appropriate tool to analyse decision making processes in order to understand the outline of the process.

PURPOSE

Our first purpose is to investigate the decision making process, and the different criteria related to each and every step of the decision making process, used by venture capital firms.

Moreover, we aim to elucidate why the decision making process is conducted the way it is in the venture capital firms, by using classical theories of decision making.

DELIMITATION

The focus of this thesis is to only involve venture capitalist firms based in Sweden, however we do not exclude companies which invest in foreign ventures since we believe that many venture capitalists are influenced by foreign investors. We intend to focus on the venture capitalist view and not for example from the entrepreneurs view. The reason is that the decision-making process is rather internal and the entrepreneurs are not included in many of the stages.

We have also delimited our thesis to the institutional venture capital firms due to the fact that there are significant differences between institutional investors and informal investors, often labelled as business angels (Landström, 1997). The main difference lies in that institutional and informal venture capitalists focus on fairly different decision making criteria. Moreover, this thesis focuses on venture capitalist firms which invest in either the seed and start up phase or in the expansion phase. This is due to the fact that a majority of the investments made in 1999 were in these phases of a company's lifecycle.

DISPOSITION OF THE THESIS

Before we present the theoretical framework we will start by giving the reader a brief description of how venture capital is supposed to be understood as well as a better understanding of what venture capitalists do and the different phases in which the VCs focus their investments. Moreover, it will highlight how the VCs are organised.

In the third chapter, this is then followed by the theoretical framework which is to be used as a platform of knowledge in the rest of the thesis. The theoretical framework consists of different theories in decision making, i.e. the contingency theory, venture capital decision making theory as well as different criteria used in venture capital decision making.

The empirical chapter is a short summary of certain variables to give a short introduction and to highlight what stage and the geographical focus the specific venture capital firms have. Further information about the VCs can be found in appendix I. This is then followed by the analysis which displays the results and analysis of our empirical findings. The thesis is then completed with the conclusion in the final chapter.

Appendix I is an individual description of our nine case companies. Appendix II is a presentation of our research process used in order to fulfil our purposes. The final appendix III displays the interview guide which we used.

INTRODUCTORY DESCRIPTION OF VENTURE CAPITAL

The aim with this chapter is to give the reader a brief description of how a venture capital firm works.

WHAT IS VENTURE CAPITAL AND WHAT DO VENTURE CAPITAL FIRMS DO?

Venture capital as a concept is relatively new phenomena, however during the latter part of the 90´s the Swedish venture capital market experienced a rapid growth, and have now grown to be one of the leading markets in Europe (SVCA, 2000). Since the phenomenon started off in the USA, most of the expressions are Anglo-Saxon. However, it is important to note that the English term 'venture capital' should not be interpreted as equal to the most commonly used Swedish word; riskkapital. It is interesting to reflect upon the fact that the term "venture capital" often is formulated as "riskkapital" in Swedish. However, even if the two terms are used in same context, the meaning differs. One could assume that "riskkapital" refers to the invested capital as a risky investment of which the investor should be aware of the risk that he or she might lose the invested capital. Conversely, venture capital refers to capital investments as a future possibility of increasing the invested capital.

This could be connected to Ruhnka & Young's (1993) portfolio approach, where they argue that a venture capital investment is an opportunity characterised by a prospect of potential gain as well as a prospect of a potential loss. Risk is a function of the probability of losing and the amount of loss, which taken together are referred to as the prospect of loss. Similarly, the prospect of gain is a function of the probability of winning and the amount of the resulting gain.

Riskkapital is equivalent to an investment in a company's equity, which is why it has been labelled "riskkapital". The term risk refers to the calculated risk taken by the investor, due to the fact that the value of the company equity will inevitably be affected during a downturn. Venture capital, on the other hand is not merely referring to the input of capital, it also implies that the investor takes part as an active and committed owner. The time-span of the investments is often limited, in order to exit the investment within the foreseeable future. Consequently, venture capital firms have specialised in being active partners aiming to support young promising ventures in their quest towards success.

The companies in which the VCs invest in are called portfolio companies. The combination of the portfolio company's possible market, product and entrepreneurship and the venture capitalist's contribution of capital, knowledge and network, seek to maximise the potential growth of the investment.

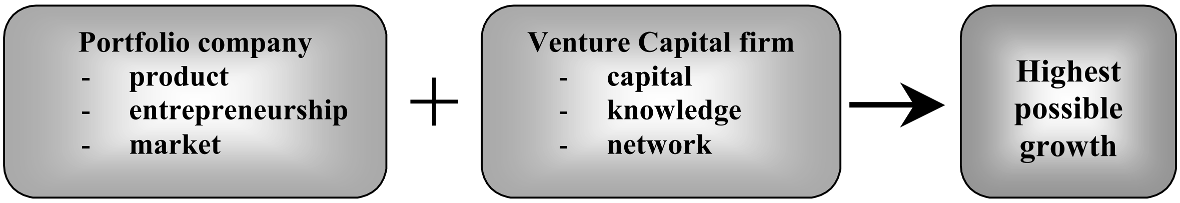

Fig 1. *The combination of VCs and their portfolio companies*
Source: SVCA, 2000

The investment made by the VCs is not solely financial, since VCs provide non-financial assistance, such as adding value by bringing investors and entrepreneurs together in an efficient manner, and to enable superior investments decisions. Thus, aiming to enhance the chance of survival.

The difference between venture capital and "riskkapital" is that venture capital investing involves an active role while "riskkapital" does not. Venture capitalists invest capital in their portfolio companies, however, when taking part as active owners the invested capital is labelled as venture capital. Hence, aiming to add value by providing non-financial assistance. When excluding the active role of the investor, this should be seen as "riskkapital".

When trying to uncover what the VC does, we found a study made by Gorman & Sahlman (1989), which focused on what a venture capitalist does and the amount of time spent on their portfolio companies. Moreover, what role does the VC have in its portfolio companies, and how is the co-operation between the VC and the portfolio company influenced when going through a downturn. What can be drawn from the study is that, on average, a venture capitalist finds two new investment opportunities per year and per person. Half of their time is spent on managing nine different portfolio investments, to which they are personally responsible. The VC has helped to finance five of these nine investments and they are members of the board in all nine companies. They visit the portfolio companies quite frequently, and over a whole year a VC spends more than 100 hours of working in the particular company. Additionally, the VC works actively to find supplementary investors and capital, evaluating strategies and recruiting new candidates for management positions. However, if a portfolio company and its management fail to meet the set goals, the VC must dismiss the present management in order to replace them with a set of people who are better suited to fulfil the task. The study shows that VCs play an important role in their portfolio companies by being active and striving to create the best possible solutions and opportunities in order to make it successful.

INVESTING IN DIFFERENT STAGES OF A VENTURE LIFECYCLE

This becomes even more interesting when taking into account that venture capitalists delimit themselves to focus either on investing in the seed and start up phase or in the expansion phase. *Seed financing* is characterised by small capital investments to an inventor or an entrepreneur in order to enable them to test their concept, usually further development of the product. *Start up financing* involves more capital since in most cases the venture is now an up and running company, however, the product needs to be tested commercially which involves marketing investments. If venture capitalists have been involved in the seed phase they usually invest in the following start up phase, merging the seed and start up financing. *Expansion financing* involves ventures which have used up their original funding and therefore need additional capital to be able to continue the commercial production as well as sales. This is due to the fact that the growth rate in production and sales are developing rapidly, which increases the demand for extra operational capital.

HOW ARE THE VENTURE CAPITAL FIRMS ORGANISED?

From a historic point of view most VCs in Sweden have been companies where the owners of the venture capital firm also have supplied the necessary capital which was invested in the portfolio companies. However, in recent years it has evolved to be more similar to the American way of structuring a venture capital organisation, where the VC consists of a management company which puts together one or more venture capital funds. These funds attract capital from external investors, which will be used as venture capital to invest in specific portfolio companies.

This so called partnership is usually labelled limited partnership, where venture capitalists serve as general partners and the investors as limited partners (Gifford, 1997). General partners act as agents for the limited partners in investing their funds. VCs invest their human capital by placing their reputation on the line. The goal is to begin to convert the investment into cash or marketable securities, which are distributed to the partners. VC management companies receive a management fee equal to a percentage of the capital of each fund, usually 2.5% (Gifford, 1997). When successful the management companies receive an additional percentage of the profit of each fund called, usually 15-30%.

One fundamental activity of the VCs is to find appropriate ventures to invest in. However, there exist just as many ways to facilitate the applying ventures as there are venture capitalist firms. Yet, empirical studies have shown that the standard procedure to evaluate possible ventures is similar among the VCs. In the following section we will discuss decision making and the different theories in decision making as well as empirical findings and theories in the field of venture capitalism assimilated by previous researchers.

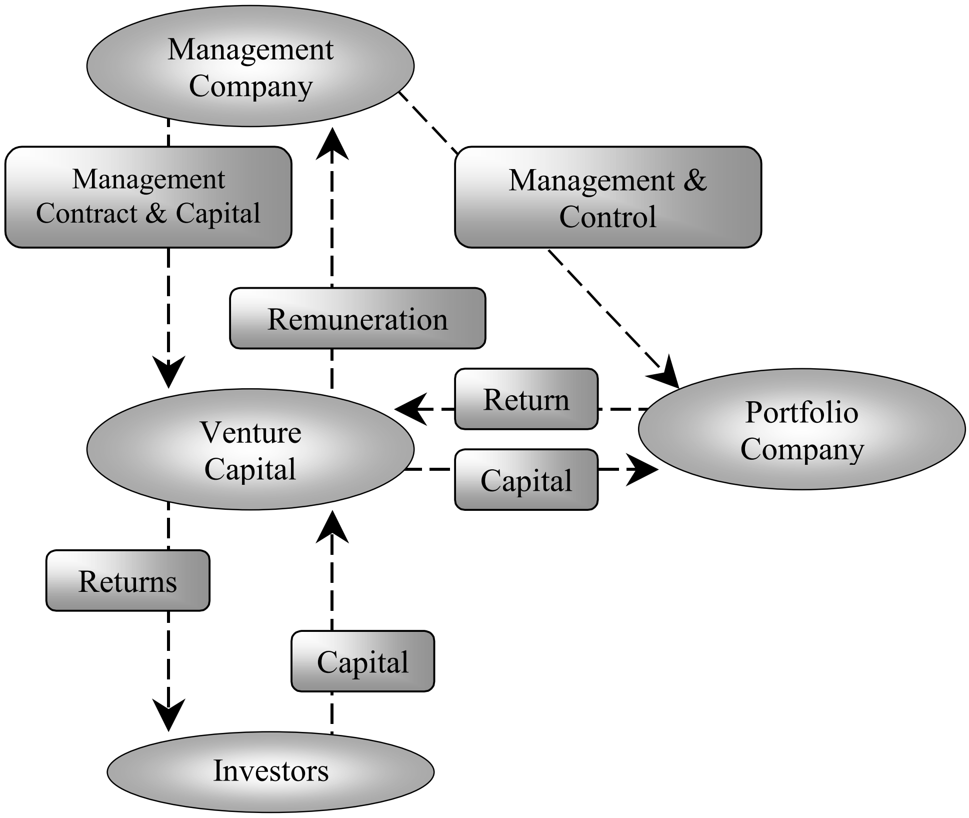

Figure 2. The organisational structure of a venture capital firm.
Source: Svenska Riskkapital föreningens medlemsmatrikel.

THEORETICAL FRAMEWORK

This chapter will introduce the reader to the theoretical framework used in the thesis. It will also be a discussion around the dilemmas in the venture capital firms.

THE PROBLEM OF UNCERTAINTY

A decision may be defined as a selection of the proposed course of action, this definition implies further aspects of organisational decision making (Butler et al, 1993). First, is the notion that there is some choice as to the actions to be taken and that there is uncertainty about which choice to take. Hence, if uncertainty did not exist there would be no decisions to make. There may be uncertainty about the preferences as to the ends to be reached or there may be uncertainties about the means of reaching those desired ends. Second there is an intention to act, although that intention may be realised during the decisions implementation.

It is possible to consider two dimensions of uncertainty (Thompson & Tuden, 1956). First is uncertainty as to the preferred outcomes, which is ends-uncertainty. The second dimension of uncertainty is uncertainty about the solutions used to achieve the desired ends, which is called means-uncertainty.

Brunsson (1985) discusses the nature of ‘estimation uncertainty’, which he means is common in economic decision making processes. According to Brunsson (1985), uncertainty could be defined as; lack of confidence in existing information. A person may be uncertain about the correct estimation of a given descriptive element in his or her cognitive structure. For example; an investor may be certain that the market for a product is an important factor, and there may be no difficulty in weighing the market aspect against investment cost. But there may still be uncertainty about whether to invest or not, if the investor is not certain about the future size of the market for the product.

UNDERSTANDING THE NATURE OF DECISION MAKING

Traditionally, decision making theory was based upon the fact that there was a known set of solutions, accessibility to full range information. In order to make rational decisions the decision maker is assumed to have a notion that a problem really exists. He or she is able to identify and correctly describe the certain problem. By accessing all the necessary information the decision maker are able to put together and process the information into a coherent picture of the problem area (Hedberg, 1980). A major deficiency of the most decision models has been that they are economically logical models seeking to describe maximisation processes. Decision making involves selecting a number of possible alternatives of action in order to choose and execute the best one. The rational decision maker aims to make optimal decisions, which in a best possible way utilise given resources to attain the desired result. However, Tuden & Thompson (1956) argue that these models have utility as criteria against which to reflect behaviour, but the contribution to the explanation or prediction of behaviour has been little.

However, studies have shown that the perception of the rational decision maker must be drastically altered. The problem of finding the problem is often more difficult than first realised. In the beginning of a decision making process the problem area most often is surrounded with ambiguity. Moreover, the decision maker's perception of reality is also often imperfect. According to Hedberg (1980), the overviewing mental maps of the decisional terrain is always simplifications of a much more complex reality. They are seldom able to predict the consequences of different actions in such a precise manner that the best alternative of action is selected.

Instead the subjectively rational or the limited rational decision maker will be prominent, where the decision maker offers his/her best within the frame of how the situation is supposed to be perceived. By putting a course of action in relation to the present situation, in order to create solutions to solve the problems. Decisions need to be made whether to continue as planned or if the situation calls for a modification of the plans. The perception of the decision maker is coloured by his or her values and assumptions, which inevitably are taken into account when facing a decision making process.

The definition of the problem as well as the decisions is coloured by the view of the decision maker and the personal perceptions and experiences of the decision makers. As Hedberg (1980) states, values often control the way that we perceive different problems and the solutions created to meet the certain problems. Values are able to be a link and to overcome where the rational view is inadequate. It becomes apparent that the limited rational decision maker is more likely to use his/her previous experiences instead of performing an unprejudiced search of the problem.

DIFFERENT APPROACHES IN DECISION MAKING THEORY

The theory of decision-making could be divided into two different categories: one which analyses around an ideal-setting and the other that tries to explain the person's genuine behaviour which also implies that there is no optimal solution. The first category has normative parts which aim to find an optimal solution. The second explains how an individual proceeds in real life decision-making. Simon* has in several articles taken a stand for limited rationality. It is a step from the classical economic theory towards a more socially constructed process.

In his model the decision-maker has a limited amount of possibilities and they are not connected to each other. The decision-maker focuses on one decision at the moment. The decision is more likely to come from the feeling of the investor. This model does not optimise the choice and does not guarantee consequent decision-making. The model does not give different alternative priority and not at all rank the possibilities. The only important thing is when the decision-maker got the information about the company. It implies that if investment A is presented before investment B the decision-maker will decide to invest or not, even though investment B did not get the chance.

'Satisficing' is a process in which the decision-maker selects the first satisfactory solution (Simon 1947). What is satisfactory is determined by setting certain minimum performance criteria rather than by trying to maximise. Simon, therefore, opened up the idea that the highly rational image of business decision-makers presented by the economic theory is limited to a quite restricted set of conditions. As decisions become more complex a different type of decision begins to take over. It would be interesting to take a closer look at decision-making process from a rational perspective, in order to enhance our understanding of the nature of the decision-making process, when it comes to venture capitalists.

The political model of decision making sees the processes of decision making as involving shifting coalitions of interests and temporary alliances of decision makers who can, for the purpose of a decision, come together and sufficiently submerge their differences to make a decision (Cyert & March, 1963). Typical processes of the political model could be *bargaining*; where individuals compete for resources and try to get the best deal from a personal perspective. *Guile*; which means avoiding disclosing all information relevant to an issue. *Coalition building*; to create a stronger support for an issue, one can combine with others in trade-offs. Overall the political model provides a highly dynamic model of decision making.

THE CONTINGENCY MODEL

In order to understand the different types of decision making processes that are best suited for particular situations we are going to use the contingency model created by Thompson & Tuden (1956). Depending on the different levels of

* Having written over 600 articles, 20 books and monographs as well as receiving the Nobel Memorial prize in 1978, we feel that he can be seen as a guru in the area of decision making

uncertainty there is a need to use different strategies to build support and solutions when dealing with means-uncertainty and ends-uncertainty. Generally, the greater the number and variability of interests involved or the more outside influences exist, the greater the tendency for disparity. This will influence the level of ends-uncertainty. On the other hand, it is interesting to note the factors which will lead to means-uncertainty which is described as: (1) incompleteness of knowledge as occurs when new technologies are being developed; (2) the object worked on is dynamic as in the production of a path-breaking prototype; (3) the unpredictability of the behaviour of outside groups or organisations such as rivals, customers, suppliers or regulators. The combination of high and low on these dimensions leads to the possibility of four types of decision process in order to manage these underlying problems of decision making (Thompson & Tuden, 1956).

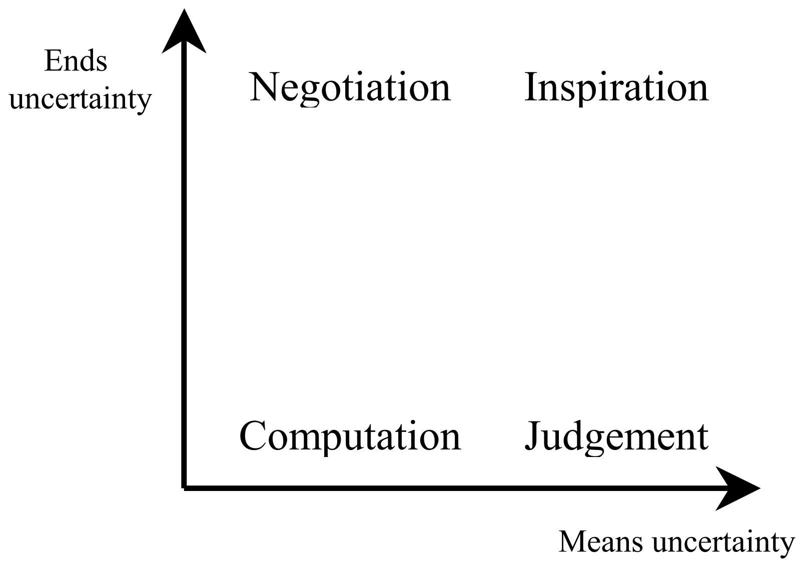

Fig. 3: The contingencies of organisational decision making
Source: Butler, R. J. (1991)

The computational strategy is suitable for certain ends and certain means and suggests that knowledge is available or believed to be available. One may not know the optimal solution to a problem, if so there would be no decision. Thus, proceeding with the assumptions of the rational model.

However, by using the computational strategy there is confidence in finding the optimal decision through analysing quantitative data. A number of measurements can be used when assessing an investment quantitatively, such as return of investment (ROI), internal rate of return (IRR). This strategy indicates a formalised and standardised structure of how the operations are carried out.

The judgmental strategy is suitable for certain ends and uncertain means. Judgement is taken to mean the use of more qualitative and intuitive type of data than is provided by computation. In situations where the means is uncertain even though the preferences are clearly known, decision making takes on new difficulties. Lacking in acceptable "proof" of the merits of alternatives the decision must rely on judgement. According to Butler et al (1993), this suggests that decision makers are prepared to make a decision on the basis of inadequate information, which is the essence of satisficing. These are essentially the processes of the bounded rational model of decision making, i.e. problemistic search, cognitive limits to rationality with limited choice generation and satisficing solutions.

The negotiation strategy is suitable for uncertain ends and certain means. This is the process in decision making whereby the participants attempt to resolve conflicting objectives or issues. There are two possible outcomes of a negotiation either you will reach a compromise or one party will win and the other one lose. Both these suggest that underlying the processes of negotiation is the power that different participants can bring to bear upon a decision issue.

The inspiration strategy is suitable when both the ends and the means are uncertain. This is the most difficult and demanding situation when discussing informational requirements. We need to be very careful with using the term inspiration because it could seems like the decision is taken without care. Nevertheless, we have to realise that we cannot disregard the fact that intuition might give a clue where to go.

THE DYNAMICS OF DECISION MAKING

One has to be aware of the fact that for example computation does not cease with increasing level of uncertainty. Rather, the model allows for these processes to interact with one another. According to Butler et al (1993) most decisions are a mix of strategies for solution and support. This is interesting to keep in mind when continuing to the next phase of the theory.

We have now discussed the general problems with decision making and will continue with describing the nature of the decision making process in VC firms. Moreover, we will further discuss how we can enhance our understanding of the decision making process in VC firms with support from the classical theories.

THE DECISION MAKING PROCESS IN VC FIRMS

The earliest VC decision process study made was a study of VCs in Pittsburgh by Wells (1974). This model of the process is modified and elaborated by Tyebjee & Bruno (1984). While this defines stages in the process, the underlying Tyebjee & Bruno study focuses on investment criteria and does not examine the specific activities that VCs undertake. However, Fried & Hisrich's (1994) work examines the entire process, and proposes a model of the process and identifies generic investment criteria. This is why we have decided to use the model of the decision making process presented by Fried & Hisrich in our theoretical framework. The decision-making process created by Fried & Hisrich can be modelled in six stages as shown in Figure 4.

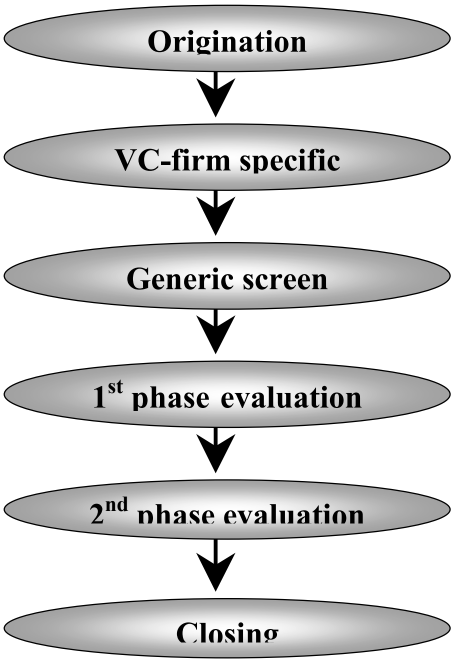

Fig. 4. The decision-making process
Source: (Fried & Hisrich, 1994)

Origination

The first phase is origination. While VCs generally wait for deals to come to them, they do make themselves known to companies through industry directories. The capacity of the VCs' efforts to generate investment proposals focus on developing a network of referrers. While VCs receive many deals "cold", i.e. without any introduction, they rarely invest in them. Occasionally, the VC already knows the founder through work either as a manager of a prior investment or a consultant.

The referred deals appear from a variety of sources, such as investment bankers, investors in the VCs' fund, commercial bankers, management of firms in the VCs' portfolio, consultants who had worked for the VC in the past, and family friends. There are two reasons for this heavy frequency of referrals. First, referred deals are more likely to pass through the generic screen if the VC has confidence in the referrer's judgement. Second, the referrer is more likely to understand what type of investments the VC might find attractive.

VC Firm-Specific Screen

Many VCs have firm-specific criteria on investment size, industries in which they invest, geographic location of the investment, and stage of financing. The firm-specific screen eliminates proposals that clearly do not meet these criteria. However, according to Fried & Hisrich, this might not be the case since even though most venture capital firms profess to have a firm-specific screen, they are opportunistic, and investment opportunities outside that screen may still have an opportunity to be funded. At most, the firm specific-screen involves a cursory glance at the business plan without any analysis of the proposal.

Generic Screen

Many proposals pass through the firm-specific screen only to be rejected without extensive review when the VC analyses the proposed investment in terms of the generic criteria. Most deals that pass through the firm-specific screen are rejected at the generic screening based upon a reading of the business plan coupled with any existing knowledge the VC may have relevant to the proposal. The generic screening will be less rigorously applied when the quality of referrer is high. The net result of the two screens is that most proposals are rejected with minimal investment of time.

1st Evaluation Phase

After proposals have passed through the generic screen, the VC begins to gather additional information about the proposal. Evaluation involves general monitoring by the VC. In these phases, the information gathered from both company and outside sources is compared to the information in the entrepreneur's business plan. The information and the reports are gathered and filtered in order to evaluate if it seems like a good or bad proposition. One has to be aware of the fact that after clearing the generic screen, a proposal's progress through the remaining stages is not predetermined.

The 1st evaluation phase generally starts with a meeting with the principals of the company seeking financing. As the proposal is being evaluated, a series of meetings with all the top management team will occur. These meetings have two goals: to increase the VC's understanding of the business and to allow assessment of the manager's understanding of the industry, the proposal, and problems that may be encountered. They also provide an opportunity to assess how managers think and behave. Management's abilities are also assessed by checking references provided, as well as others not identified by the entrepreneur. The extent of reference checking varies depending on the VC's prior knowledge of the entrepreneur.

Both existing and potential customers are contacted to determine why they are buying or not buying from the company. VCs which invest in early-stages may contact potential customers before a product has been fully developed. Another way is to make formal market studies, sometimes facilitated by outside consultants. This is due to several reasons. First, a great deal of information is almost always in the business plan. Second, contacts with customers and potential customers provide additional information. Third, sometimes the market is not clearly defined.

Technical studies of a product are used much more by early-stage investors than late-stage investors, because late-stage investors can get a good feel for the state of the company's technology by talking with customers and industry experts. Early-stage investors achieve their technological evaluation in a variety of ways. Several early-stage investors have formal affiliations with technology experts. Other early-stage investors might handle technology assessment on an informal, ad hoc basis.

VCs also talk to each other. Their experience with proposals they have analysed and investments they have made gives VCs knowledge that might be useful to others. VCs have traditionally invested through loose syndicates (Reiner, 1989). To some extent this is to pool capital in order to share risk and increase the absolute amount of capital that can be can invested in any one company. According to Bygrave & Timmons (1992), syndicates are also formed in order to share knowledge.

VCs analyse pro forma financial projections prepared by the entrepreneur to assess a project's potential for earnings growth, as well as to gain information about management's understanding of their proposal and their realism toward its future. The financial projections provide a basis for comparison with the market value of other companies, to give the VC an estimate as to the potential value that can be received when it exits the investment.

2nd Evaluation Phase

At some point the VC develops an "emotional" commitment to a proposal, which marks the start of the second phase of the evaluation process. Evaluation activities continue, but the amount of VC time spent on the proposal increases dramatically, and the VC's goal changes. While in the first phase the goal is to determine whether there is serious interest in a deal, in the second phase of the process the object is to determine what the obstacles to the investment are and how they can be overcome.

The degree to which firms formally recognise the movement from first to second evaluation phase varies greatly. The same is true for the shift from second-phase evaluation into the closing stage. The last three stages are not clearly distinguishable in all VC firms. Because of the significant amount of time spent in the second phase, VCs like to have at least a rough understanding about the structure of the deal, including price, before entering this phase. This keeps the VC from devoting significant time evaluating proposals that ultimately will not be investable because they are priced too high. Since totally unrealistic initial pricing proposals from the entrepreneur may lead to a quick turndown, some entrepreneurs submit proposals without a price to avoid negatively influencing the VC in the generic screen and first-phase evaluation stages.

Closing

After progressing through the 2nd evaluation phase, the proposal enters the closing stage, where the details of the structure are finalised and legal documents negotiated. After the documents are signed, a check is given to the company.

It is interesting to note that Fried & Hisrich's model of the decision making process does not include post-investment activities which Tyebjee & Bruno (1984) emphasise in their model. The post-investment activities include setting up controls to protect the investment, providing consultation to the management and finally helping orchestrate the merger, acquisition or public offering which could create a public market for the investment.

When comparing the findings of Tyebjee & Bruno (1984) with the findings of Fried & Hisrich (1994), it becomes clear that there are many similarities, however there are also major differences. The screen phase described by Tyebjee and Bruno is labelled as the VC firm-specific screen. When Fried & Hisrich discovered that most proposals passing through this screen are still quickly rejected, they added the generic screen.

Tyebjee and Bruno do not divide the evaluation phase into two parts. Rather they show only one phase, with pricing negotiated in the following step of the process. Fried & Hisrich´s model indicates that pricing is negotiated much earlier in the process, with the level of VC evaluation activities increasing significantly after pricing is settled. Their model also points out the significant need for information-gathering activities.

In every single stage of this process there must be a way to judge whether the VCs should continue to analyse the proposal in the next stage or not. To do that there is a need of instruments to measure what the successful venture has for typical look. The VCs need criteria to use as tools to measure what potential a specific proposal has. In the next section we will further discuss the criteria that have been found in the research.

INVESTMENT CRITERIA

The need of studying the investment criteria becomes obvious when given that most venture capital firms are operated by a lean staff, the fact that they are inundated with proposals becomes a significant bottleneck in their operations. This will affect the productivity, since much time is spent on processing, evaluating and consequently rejecting of flawed proposals (MacMillan et al, 1985). Moreover, several viable proposals are rejected due to the fact that they have flaws that could have been removed. The feasible explanation to this problem is that entrepreneurs are not aware of the flaws since they have not been alerted.

The criteria that were found expand upon the three basic constructs identified by MacMillan et al (1985): product/service and market, management and financial considerations. The most important criterion to be met was the entrepreneur (Dixon, 1991). This is further supported by MacMillan et al (1985), who argue that irrespective of the car (product), race (market), or odds (financial criteria), it is the driver (entrepreneur) who fundamentally determines whether the venture capitalist will place a bet.

Product/Service and Market criteria

When looking at the product/service the investment must involve a business idea of a new product, service, or retail concept that works already or can be brought to market within two to three years (Fried & Hisrich, 1993). Another important criteria when assessing the product criteria is that there is some proprietary protection, preventing copycats launching a similar product at a lower price (MacMillan et al, 1985). From a market perspective MacMillan et al argue that the far most important criteria was a product/service in market with a high market growth. However, Fried & Hisrich state that the concept should offer a substantial "competitive advantage" or be in a relatively non-competitive industry. Thus, if the concept has a great competitive advantage the venture has great possibilities of becoming successful due to the fact that a high growth rate could be achieved although competing in a competitive environment.

Financial criteria

According to Fried & Hisrich (1993), there should be significant potential for earnings growth. This is obvious for early-stage ventures, which may not be generating revenues yet. It is difficult, if not impossible, to get venture capital rates of return (30% to 70% IRRs) without significant earnings growth. Earnings growth may come from a rapidly growing market or through increasing market share. VCs generally reap returns by a public offering, sale of the company, or buyback of the VC investment by the company. VCs do not expect easy liquidity, but they require the likelihood of some type of exit in a three- to ten-year period (MacMillan et al, 1985). Moreover, the venture should offer the potential for a high absolute return. VCs are not willing to spend time on small investments that offer low absolute returns, even if the rate of return is high.

Entrepreneur/Management

There are several attributes the VCs want to see in the entrepreneur/manager. Fried & Hisrich (1993) identify two aspects which are seen as important. First, managers must display personal integrity. Second, they must have done well at prior jobs. The track record does not have to be with the current company. Association with losing ventures in the past does not disqualify the entrepreneurs if they can show they personally performed well in the earlier venture.

A successful manager should be realistic. VCs try to judge the manager's ability to identify risk and, where appropriate, develop plans for dealing with these risks (MacMillan et al, 1985). Managers also need to be hardworking, flexible, and have a thorough understanding of the business. Flexibility is especially important for early-stage ventures.

Managers should exhibit leadership, not only in good times but also under extreme pressure. Finally, managers must have general management experience. Leadership capabilities and general management experience may not be as significant in an early-stage venture as long as the entrepreneur is willing to add additional management, possibly at the C.E.O. level, to correct this deficiency.

These are broad generic criteria. The specifics of each criterion may vary from VC to VC. Opinions will differ on acceptable rates of return as well as the importance of various criteria. For example, some VCs will invest in a strong concept even if they view management as a question mark. Others will invest only if they feel management is very strong. Even if two VCs have the same criteria, there may be major differences in their judgment as to how well a particular investment proposal meets these criteria.

OBSTACLES TO OPTIMAL VC DECISION MAKING

As mentioned earlier, it is well recognised in previous studies of decision making that decision makers are not perfectly rational, but boundedly rational (Newell & Simon 1972, Simon 1955). The optimal decisions inhibit biases and heuristics (Tversky & Khaneman 1974). The availability bias may encourage decision makers to recall past successes rather than failures (Dawes, Faust & Meehl, 1989). Therefore, a VC would be more likely to assess the success of a current venture by how similar the current prospect is to a past success. If the venture under consideration uses the same technology, or has the same lead entrepreneur, such information may bias the VC to overlook other information that suggests the current venture is likely to fail. Similarly, if a VC utilises a satisficing heuristic, the VC might reject new ventures that fail to meet any one of the minimum requirements on the VC's list of evaluation criteria, even if all the other criteria are substantially higher than the minimum requirements. As such, the VC may eliminate potentially profitable investments from further consideration because of a heuristic rule, which is used to make the screening process manageable. However, considering the number of proposals that VC's review, such time saving trade-offs may be more cost effective in the long run.

According to Schanteau (1992), biases and heuristics are more common in certain tasks than others. Some aspects of the VC task make it more difficult and open to sub-optimal decision making. One has to be aware of the fact that much of the information is constantly changing. The well-known "window of opportunity" is constantly closing and opening, which becomes clear when looking back only a few years. For example, the use of Internet has created endless opportunities, however, the previous optimism has transformed into an attitude of diffidence towards the future possibilities of becoming successful just by using Internet as the primary tool to reach its customer. Additionally, feedback on the quality of the VC's decision is slow, since it may take several years before conclusions can be drawn about the previous decision. It generally takes 7 years to identify the portfolio winners, and 2 to 3 years to identify the losers (Timmons, 1994). Thus, the long time before receiving feedback affects the possibility of adjusting the decision process in accordance to the feedback.

Biases, heuristics and a number of difficult task characteristics result in sub-optimal decisions. VC's tend to consider each venture proposal as unique thereby recalling differing available information factors from memory resulting in low *intra-judge* reliability (Zacharakis & Meyer, 2000). The focus of certain factors surrounding a decision may unduly bias VCs by encouraging them to pay more attention to certain information factors than necessary. Thus, making VCs more likely to inconsistently apply their own decision criteria, which also will result in low *intra-judge* reliability.

Moreover, Zacharakis & Meyer state that low *inter-judge* reliability can be attributed to differences between the VCs, such as experience, education and other demographic factors. These differences influence the VC's perception of the venture proposal. The fact that each individual perceives the world differently leads to different decisions. Therefore, consistency between decision makers within the same area may be affected, resulting in low *inter-judge* reliability.

The survey showed that the more information that surrounds the decision the predictive accuracy of the VC decreases. The decreased decision efficiency has several potential explanations, including cognitive overload and story incoherence (Pennington & Hastie, 1986). As more information becomes available it is more difficult for the decision maker to interpret each piece of information, let alone how that information impacts others factors. Thus, it is cognitively harder to create a story or scenario where the venture will succeed. Story incoherence usually results in a negative interpretation of a situation (Pennington & Hastie, 1986). Hence, identifying the most important criteria, and removing the noise caused by all other information surrounding the decision may improve the decision process.

More information also appears to affect whether VCs judge a venture as potentially successful or not. It seems that VCs with more information are less likely to view ventures as potentially successful. Such a failure bias may suggest that VCs are employing a satisficing heuristic in their decision making (Simon, 1955) where the business plan must meet a minimum level on each criterion or be rejected. With additional information, there is an increased likelihood that a venture will fail on one information factor and be eliminated from further consideration. Poor standing on one criterion may become essential and bias the VC. Weakness on one criterion may wipe out an otherwise sound investment.

CONCLUDING THEORETICAL THOUGHTS

We want to clarify the fact that "choice" from among alternatives seems to be the end point of decision making, but the term decision will not be confirmed simply to ultimate choice. Rather, decisions will refer to those activities which contribute to choice, including recognising or delimiting and evaluating alternatives as well as the final selection (Thompson &Tuden 1956). Thus, an individual may have responsibility for making a final choice on behalf of an organisation, but if others help him to delimit or evaluate alternatives we will not describe that individual as *the* decider.

To be able to really understand the comprehensive picture of venture capital decision making, we believe that we need to connect the descriptive model of decision making in venture capital firms, to the concept of the contingency decision making theory. Thus, due to the fact that the model of VC decision making is standardised and fragmentised it excludes several important aspects of decision making processes, which we believe can be explained by using the theories presented in our theoretical framework. By applying the contingency model of decision making to the empirical findings in the venture capital decision making process, we aim to get a deeper understanding of how the specific decisions are assessed in the different steps. Hence, explaining why the decision making process is conducted as it is in the VC firms.

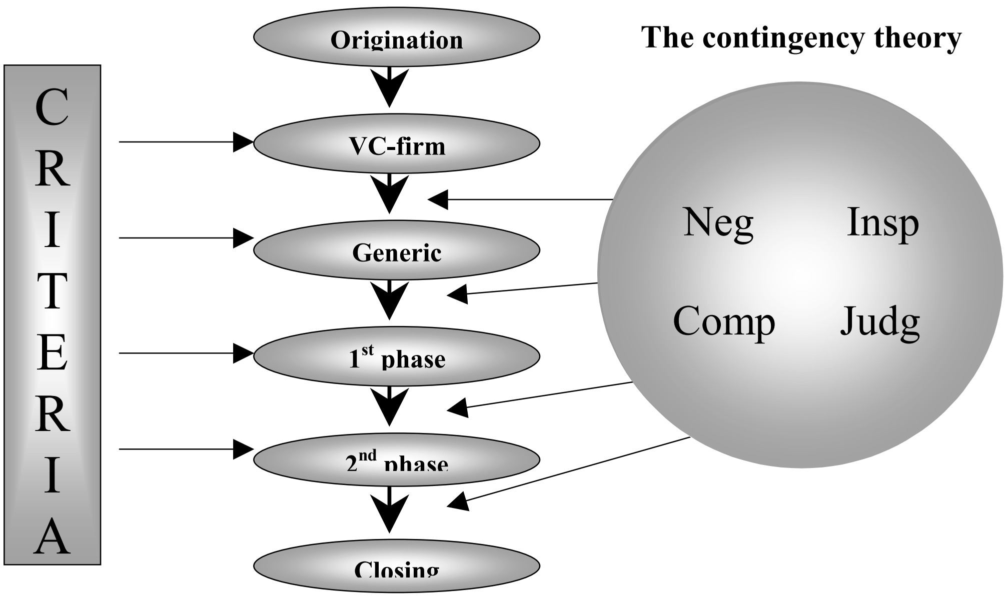

Fig. 5 Own model

As stated before, during our empirical studies we aim to clarify the different criteria used in each and every step of the decision making process. The contingency model is to be used as a tool to understand how the VCs assesses the criteria in order to make a decision whether to continue to the next step or to reject the proposal.

The validity of our theoretical framework could be questioned. However, to use Fried & Hisrich (1994) might be hard due to the fact that their model is developed from the classical models of venture capital decision making process (Wells, 1974, Tyebjee & Bruno, 1984) and there is, as far as we see, no real disagreement about how it looks in a practical way. Fried & Hisrich (1994) have also developed the model and have also tried to integrate the criteria into the classical model. Our opinion is that they only did half of the integration and did not connect the different criteria to different parts of the decision making process. We aim to develop the model through integrating the criteria into the specific steps of the model, which will develop the model and make into a more pragmatic model of decision making in VC firms. Nevertheless, we will also reflect upon how the level of uncertainty in venture capital decisions may affect the nature of decision making processes.

EMPIRICAL

In the previous chapter we presented a framework, which we now will apply on our empirical findings in order to explain the different results. In appendix I there is a brief description of each and every case company. However, our case companies want to be anonymous due the fact that the information about them might be slightly sensitive. So our aim is to mention them, A, B, C, etc. Our opinion is that it wont affect at all that the names are not mentioned.

In the chart below much of the information is summarised to give the reader a chance to compare and see the pattern which has occurred. This pattern will be identified and further developed below the chart and the analysis.

Company	Industry focus	Investment stage	Geograph. Focus	Position
A	TIME	Seed start-up	Nordic	Inv. Manager
B	IT, Biotech	Seed start-up	Nordic	Inv. Manager
C	Mobile internet	Seed start-up	Nordic	CEO
D	TIME	Seed start-up	Global	Inv. Manager
E	IT, Biotech	Seed start-up	Sweden	Inv. Manager
V	Unlimited	Start-up Expansion	Sweden	CEO
X	Unlimited	Expansion	Sweden	Inv. Manager
Y	Unlimited	Expansion	Nordic	Inv. Manager
Z	Unlimited	Expansion	Global	Inv. Manager

It is interesting to note that when looking at the chart above and reading the descriptions, that there is a clear correlation between industry and the investment stage. Other correlations or similarities are hard to spot when looking at other aspects such as geographical focus. Most of the companies were founded just a few years back; six out of nine companies were founded during the last 1-5 years. The others were founded in the eighties.

The VCs often want to be minority owners but still have at least 10 %. Most of the VCs appreciate if the entrepreneur remains the largest stakeholder of the company because it creates a strong incentive to work hard in order to become successful.

> *"The entrepreneur must have the intention of becoming successful and extremely rich, because this will inevitably make our investment a successful one."*

Moreover, it is not always preferred that the entrepreneur is the only major stakeholder since this influence the decision making regarding business lines of the company. Hence, affected by personal objectives this will hinder the entrepreneur from making sound decisions. One way to deal with this situation is to involve the rest of the staff of the venture as owners, which will create a more balanced owner structure.

ANALYSIS

In the previous chapter we presented a theoretical framework, which we now will apply to our empirical findings in order to explain the different results. This chapter aims to present the VCs decision making process and how these processes are conducted in our case-companies.

The disposition of the analysis will be to start with a discussion of the decision making process step by step focusing on similarities and differences between our case companies in individual steps in a quite practical manner. The patterns will be briefly discussed and analysed. Further on we will compare and analyse the case companies by their decision-making process as one part and compare it to the venture specific theoretical framework as well as classical decision making theories.

We will use a system where we define 7 or more companies as 'most of', more than five companies as the majority. Four or five companies will be defined as half of the companies and less than four will be defined as the minority. The terms 'all' and 'none' hopefully speak for themselves.

ORIGINATION

The VCs make themselves known to companies in the different directories. What can be drawn from the discussions is that all companies focus on expanding their network of referrers. The referred deals appear from a variety of sources, such as investment bankers, investors in the VCs' fund, management of firms in the VCs' portfolio, and family friends. However, there are different possibilities to find new interesting proposals;

> *"Of all the proposals that we get, 14% arrive from academia, that is proposals based on different doctoral studies as well as through the Venture Cup competitions that nourishes young promising business ideas."*

The case companies' way of working in the origination phase conforms to the findings of Fried & Hisrich's study. When discussing referred deals with the VCs the discussion tends to be about trust and how it affect the decision-making process. The referrer knows what the VC is looking for since the referrer understands what type of investments the VC might find attractive. In the majority of our companies referred deals are more likely to pass through the generic screen if the VC has confidence in the referrer's judgement (Fried & Hisrich 1994).

Moreover, when looking at problem of adverse selection, the origination phase reduces the adverse selection problem. At origination, a referral network lowers risk, because the referrer, who is generally familiar with the proposal, will want to maintain his/her relationship and standing with the VC. Thus, acknowledging the role of trust between the VC and the referrer.

According to the majority of the VCs, a great deal of their investments originated as referred, as many as 60-80% of the final investments were initially referred by someone from the VC's own network. Thus, supporting the notion of that while VCs receive many deals "cold", i.e. without any introduction, they rarely invest in them. One VC mentioned that:

> *"We almost only invest in referred deals, despite the fact that only 10 % of the proposals are referred"*

Even though the majority of the VCs rely on referrers, being an early-stage investor implies involving less information about the history concerning the seed and start-up phase, than ventures which have some historical background being in the expansion phase. Thus, the absence of information results in a greater reliance in the referrer's opinions. However, in our investigation, there is little support showing that early-stage investors tend to rely more on the referrer than VCs in the expansion stage. Yet, case company Z did distinguished themselves from the others, since they did not tend to invest in referred proposals to the same extent as the others. 50 % of the prospects were referred and only 40 % were actually invested in. It might be explained by their global focus due to the fact that their referrer sends them more prospects compared to more focused players.

It becomes clear that the network referrals play an important role for a proposal to succeed in passing through the VC-specific phase. Furthermore, there seem to be no difference, in processing proposals in the origination phase, between the VCs investing in the seed-start up phase and VCs which invest in the expansion phase.

VC FIRM-SPECIFIC SCREEN

In this particular phase of the decision making process the VCs focus on different firm-specific criteria, for example geographic location, investment size and industries in which they invest. The purpose of this stage is to eliminate proposals that do not clearly meet the specific criteria. Most of the VCs clearly stated that they were not interested in deals that are not within their area of focus.

When looking into the different VCs firm specific criteria it becomes obvious that there is a clear distinction between the VCs investing in the seed-start up phase and the VCs investing in the expansion phase. VCs investing in the seed-start up phase have specific criteria that need to be met in order to be of further interest. All five VCs in this category (A, B, C, D and E) invest only in ventures which fit into their specific industry focus.

The rest of the companies were not focusing on a certain industry, even though one of them mentioned that they did not invest in the shipping industry or real estate due to the relatively large investments needed.

To sum it up, we could see that the theory fits well with our empirical findings.

THE GENERIC SCREEN

The purpose of the generic screen is to eliminate prospects in a fairly standardised way. Easiness is very important. The generic screening often starts with analysing the business plan. All of the VCs had relatively the same procedure. The person who is conducting the generic screen process evaluates the proposal based upon the existing knowledge the VC may have relevant to the proposal. A typical statement could be:

> *"It could be that I have seen a similar business idea before and it was not a successful one."*
>
> *"The estimations of the future market growth made by the entrepreneur were way too optimistic."*

The investment criteria that were focused were the market, product/service and financial aspects, although the ideal business plan should be rather short, just enough to get a fairly good picture of what, where and who the entrepreneurs were aiming at.

However, some differences could be seen. We have tried to spot any particular pattern between the groups but realised that it is hard to generalise. Although there is a tendency that when screening the proposals, early-stage investors might use analysts more often and legitimise that they take decisions about rejecting a prospect. A few VCs have mentioned that analysts read through the prospects evaluating the business proposals and eliminate the ones that do not seem to be of further interest. Other VCs mention the need for having an experienced manager to evaluate the proposal to avoid missing any business opportunities. Half of the companies use investment managers as early as in this phase.

> *"We never meet any entrepreneurs before we have a relatively clear picture of what they are supposed to do. It would be too time consuming if we were supposed to meet every entrepreneur in person."*

It becomes apparent that the VC-specific screening and the generic screening are effective when it comes to narrowing down the amount of business proposals, around 80%, in one case as much as 95%, of the business proposals were rejected before the VC even met the persons behind the proposal.

1ST EVALUATION PHASE

After proposals have passed through the generic screen, the VC begins to gather additional information about the proposal. Evaluation involves general monitoring by the VC. In these phases, the information gathered from both company and outside sources is compared to the information in the entrepreneur's business plan. The information and the reports are gathered and filtered in order to evaluate if it seems a good or bad proposition. One has to be aware of the fact that after clearing the generic screen, a proposal's progress through the remaining stages is not predetermined.

The first-phase evaluation generally starts with a meeting with the principals of the company applying for venture funding. Our case companies often started this phase with an informal meeting. As one VC said:

> *"We sit down together having a cup of coffee. The aim with this meeting is to get to know the entrepreneur. "*

Generally this meeting gives a good picture about the entrepreneur. Several of the VCs in the survey decided whether to accept or reject after the first meeting. The majority of the VCs agreed that first impressions often tend to last, i.e. if you got a "bad" first impression, it rarely leads to a second meeting. The most common reason to reject a prospect in this phase is that the entrepreneur fails to meet the expectations and necessary requirements that need to exist in order to be a successful entrepreneur. During the meetings the VCs also get an opportunity to assess how managers think and behave.

> *"The entrepreneur must have the spirit and the urge to be successful. In most cases it is obvious if he or she is the right kind of person to make things happen"*

> *"When evaluating the different criteria, the entrepreneur is 80 %"*

> *"The entrepreneur is by far the most important criterion"*

One company distinguishes themselves from the others when mentioning that:

> *"The product is the far most important due to the fact that the entrepreneur is exchangeable."*

As the proposal is being evaluated, a series of meetings with the top management team will occur. The meetings have two purposes: (1) to increase the VC's understanding of the business and (2) to allow assessment of the manager's understanding of the industry, the proposal, and problems that may be encountered.

All of our case companies did a thorough investigation of the previous track record of the management. Management's abilities are also assessed by checking the references provided, as well as others not identified by the entrepreneur. The extent of reference checking varies depending on the VC's prior knowledge of the entrepreneur.

> *"We always check the track record of key persons in a venture, to check if there might be any inappropriate actions or negative details in the previous history of the entrepreneur."*

Furthermore, as Fried & Hisrich stated in their model, both existing and potential customers are contacted to determine why they are buying or not buying from the company. All of the VCs did a thorough investigation of the customer segment in the process of evaluating the proposal. The ventures of the early-stages usually involved contacting potential customers, since the product has not yet been fully developed. VCs investing in the seed-start up phase discussed with potential customers how possible demand could be satisfied, were there any "gaps" from a market point of view that could be filled. The discussions with the potential customers provided additional information, such as defining the market, to the VC enabling them to obtain a more comprehensive picture of the possible barriers and success factors of the product/service. If the VCs feel that they were not able to obtain this picture themselves, consultants are often used by VCs to acquire the necessary knowledge of the product/service in question.

Another way which was used both by both groupings was to talk to other VCs. Their experience with proposals they have analysed and investments they have made gives VCs knowledge that might be useful to others. However, the VCs in the seed-start up phase tend to use other VCs to a greater extent than VCs in the expansion phase. This might be the result of the fact that seed-start up ventures in most cases have less company specific information than the VCs in the expansion phase. By talking to other VCs, it is possible to use the learnings and experiences of other VCs which might give valuable insights to the investing VC. Thus, resulting in avoiding going through with a bad investment decision. This scenario is possible since there is no outspoken competition between the VCs due to the fact that the supply of possible success ventures is vast. To some extent we got the impression that this scenario has created a win-win situation, where the VCs are willing to help others since they know that this favour will be returned some other time. As the saying goes "If you scratch my back, I will scratch yours".

The importance of analysing pro forma financial projections, prepared by the entrepreneur to assess a project's potential for earnings growth, is an essential part in this stage of the decision making process. This process will also help to gain information about the entrepreneur's understanding of his/her proposal and their realism toward its future. We experienced that seed-start up VCs more often had a more sceptical approach towards the potential of the entrepreneurs estimations and calculations.

> *"I believe that several of the entrepreneurs applying for venture capital, have unrealistic expectations of the future possibilities, earnings and growth."*

VCs investing in the expansion phase are able to use information based upon the historical events which occurred during the seed-start up phase. As stated earlier, the financial projections provide a basis for comparison with the market value of other companies, to give the VC an estimate as to the potential value that can be received when it exits the investment. This makes it easier for the VC to evaluate the expectations and the predictions of the ventures applying for further venture capital, since previous historical data are able to give the VC further support in their investment decision.

To summarise, the 1st evaluation phase start with meeting the entrepreneur, if the result of this meeting still is positive then the VC conducts a thorough investigation of the product/service, market and the financial aspects.

2ND EVALUATION PHASE

Fried & Hisrich (1994) stated when proceeding to the second phase of the evaluation process it is obvious that VC often develops an emotional commitment to the proposal. Evaluation activities continue, but the amount of time spent by all the VCs on the proposal increased, and the VC's goal changes. While in the first phase the goal is to determine whether there is serious interest in a deal, in the second phase the object is to determine what the obstacles to the investment are and how they can be overcome. The majority of the VCs mentioned the emotional commitment as a problematic issue.

> *"It is easy to be blinded in the process of working full time with evaluating a venture. I find it very important to get a 2nd opinion from a person outside the project who is not as emotionally involved as I may be."*

> *"You have worked intimately with the entrepreneur over a period of time which makes it hard to realise that there are too many problems to deal with. You do not want to see all your effort going down the drain."*

The degree to which firms formally recognise the movement from first to second evaluation phase varies greatly. The same is true for the shift from second-phase evaluation into the closing stage. The last three stages are not clearly distinguishable in all the VC firms. Because of the significant amount of time spent in the second phase, all the VCs like to have at least a rough understanding of the structure of the deal, including price, before entering this phase. This keeps the VC from devoting significant time evaluating proposals that ultimately will not be investable because they are priced too high. Since totally unrealistic initial pricing proposals from the entrepreneur may lead to a quick turndown, some entrepreneurs submit proposals without a price to avoid influencing the VC negatively in the generic screen and first-phase evaluation stages.

CLOSING

The closing phase is when the board formally confirms the actual decision. However, we could see from our empirical studies that the informal decision almost always will be confirmed by the board, which makes the formal decision whether to invest or not. One VC mentioned that:

> *"It is very rare that the board declines an investment proposal. We would not present a proposal that was not viable"*

One can conclude almost no companies will be rejected in this phase. If there are any late rejections, it is often due to irregularities.

HOW ARE DECISIONS MANAGED IN THE DECISION MAKING PROCESS

In order to comprehend the entire process of decision making in venture capital firms we need to identify what kind of strategies that are used in venture capital decision making. Thus, gaining a comprehensive picture of the outline of the process.

When looking at the decision making process we have identified four different confirmation stages which are passed during the proceedings of the decision making process. Each stage signals the end of a certain step of the process in order to proceed with the next step. If the proposal is not being confirmed to meet the evaluation criteria of the particular step it is being rejected.

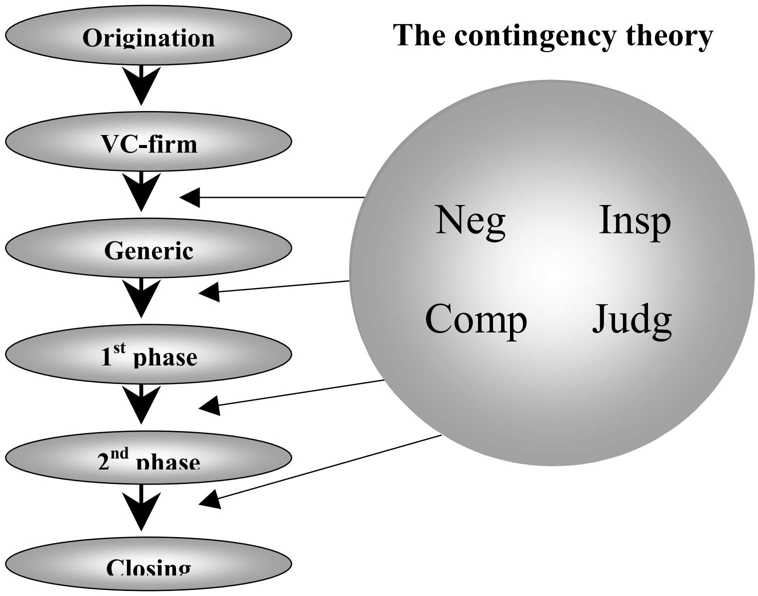

Fig. 6 Own model

The first obstacle obtaining a final investment decision arises after the evaluation in the VC-specific screening step. In order to proceed to the following step, the assessment of the VC-specific screen aims to determine whether the proposal is able to pass the basic requirements or not. In the case of companies A-E, all of them had an industry focus that is investing in a certain area of the industry. However, the geographical focus tended to be more extended than in the rest of the companies.

When looking at the VC-specific screening stage it is obvious that all companies have a standardised and formalised method to screen venture proposals, even though the criteria used might differ. The specialised VCs evaluated the ventures based on the industry as well as geographic location, while the more diversified VCs screened ventures solely on geographic location. This stage could be said to relate to the computational strategy of decision making in the contingency model. The process can be said to be a binary selection through evaluation of quantitative data, in our case industry and geographical focus of the venture proposal.

> *"The proposal needs to be within our specific investment focus"*

If the venture is not focused in a particular industry or geographical area, then the proposal is most likely rejected. By screening venture proposals based upon specific criteria, the VCs are able to drastically reduce the number of venture proposals. This way of reducing the ventures could be compared to the rational model of decision making which means that decision making is conducted with clear objectives as well as assimilating a lot of information in order to make a solid decision. However, since the proposals are very briefs the VCs rationalise their decision making in order to reduce the uncertainty surrounding the venture proposals. The reason for specialising is to lower the level of uncertainty by investing only in a particular industry. The more focused a company tends to be; the more knowledge and competence could be gained within in this certain focus. Hence, gaining information ultimately reduces the level of uncertainty. However, the VC-specific screening will not affect the uncertainty surrounding the particular venture.

In the generic screen the purpose is to evaluate the proposals from a more business like perspective. No differences could be found when comparing VCs which invested in the early stages (Company A-E) in relation to the ones which invest in the expansion stage (Company V-Z). The person who evaluates the venture proposal mainly focuses on the business plan as a main source of information. All the case companies focused more or less on the same criteria when reading the business plan. The aim is to reveal if the proposed business idea is a sound one and if their predictions about, for example, the development of the future market are realistic. The analyst or the investment manager makes an overall judgement.

> *"Is the business idea sound?"*

"Have I seen this approach before?"

"Are their estimations realistic?"

As in the Judgement strategy the generic screening involves using more qualitative and intuitive type of data than used in the computation strategy. In situations where the means is uncertain even though the preferences may be clearly known, decision making takes on new difficulties. Lacking in acceptable "proof" of the merits of alternatives, the decision must rely on judgement. A business plan is usually a brief description of the business idea. Thus, the decision in the screening process is made on the basis of inadequate information. The statements above also show the presence of satisficing which is one of the main characteristics in the judgement strategy. Hence, not only the fact that the decision is made based on incomplete information but also that the generic screening does not focus to get the optimal solution, rather if certain minimum performance criteria are met, then the proposal proceeds to the next stage.

One has to be aware that the past experiences as well as the educational background of the analyst/investment manager will influence the decision whether or not the proposal seem to be interesting. In this particular stage most of the VC firms used one who evaluated the proposals. This suggests a low inter-judge reliability, since it is the personal experiences and background that influences whether to accept or reject.

However, all VCs agreed that one person could make the decision to reject proposals in the generic screening stage, however in order to proceed, to the 1st evaluation phase, a majority of the VCs used internal weekly meetings where the analysts, investment managers and other management people met to discuss the most interesting proposals. This could result in a proposal being rejected even though the analyst/investment manager found it interesting at first. This way of processing the proposals in the generic screening process indicates that it is of greater importance to stop the "bad" proposals from continuing in the process than losing a promising one due to individual experiences of the analyst or the investment manager. Thus, there could be said to be a low inter-judge reliability in the rejections, but not in the proposals which proceed to the next stage. The future success of the VC cannot be found in the ability find the optimal venture; it is the ability to avoid investing in ventures which might be a waste of time, effort and eventually funds.

When looking at the 1st evaluation stage in the decision making process the prominent strategy is not that obvious. Due to the fact that this stage involves an assessment of the entrepreneur as well as of the product/service, market and returns.

The first meeting with the entrepreneur will take place in this phase. The assessment of an individual involves a psychological evaluation of the entrepreneur and persons behind the venture. Most of the VCs claimed to have a pretty good picture, after just one or two meetings, concerning if the entrepreneur was capable or not of going through with the plans of the venture.

> *"It does not take to long to realise if the entrepreneur has really got what it takes to make things happen."*

> *"In some cases we decided to meet the entrepreneur even though we were doubtful, and sometimes the entrepreneur managed to make such an impression that we decided to go further with the proposal. In other cases we were very positive before the meeting, but after meeting the entrepreneur, we decided not to proceed."*

The assessment of the entrepreneur's managerial and entrepreneurial skills is more or less based on the judgement strategy of decision making. Even though evaluating the entrepreneur could be said to be difficult, we believe that the VC base their strategy of decision making on the judgemental strategy. Moreover, Butler et al also stated that the unpredictability of behaviour is a factor, which will lead to an increased means-uncertainty. Finally, when the information available is inadequate, the individual often tends to let personal values create the link that fills the gap of inadequate information (Hedberg, 1980). Thus, the judgement strategy of decision making.

Similarly, when the VC has little prior knowledge of the entrepreneur, the assessment involves checking references provided by entrepreneur, using the network of the VC.

> *"We discovered a few skeletons in the closet when looking into the previous history of the entrepreneur."*

When this kind of information turned up it was recognised by most of the VCs as a major reason to reject the venture proposal. If using the judgement strategy, i.e. satisficing with minimum requirements which need to be met, the VC would most likely reject the venture even if other criteria were substantially higher than the minimum requirements (Dawes, Faust & Meehl, 1989).

In the assessment of the product/service, market and returns all the VCs started the process of gathering information around the venture in question, since the process of assessing these different criteria had similar proceedings we will analyse them as one entity when possible and separately when differences occur.

The assessment of the investment criteria aim to get a deeper understanding of the characteristics surrounding the venture, this by conducting a thorough analysis of the venture in question. When assessing the product/service a majority of the VCs turned to external sources of knowledge in order to evaluate the strengths and weaknesses of the product or service. By using an expert within the particular field the VC got an expert opinion if the product or service was able to satisfy a demanding customer. Being an early stage venture, the product or the service is in many cases not yet fully developed and the estimations and predictions are made on the basis that the product or service development will succeed. When assessing the market for the product or service most of the VCs aimed to evaluate the market for the product, the degree of competition as well as the growth potential of the product. All the VCs had a formalised procedure on how to assess the venture. By financial calculations and modelling the VC could obtain the information necessary to assess the venture, which indicate that they know what information they want and how to process the information. Hence, using the computational strategy since the level of ends- and means-uncertainty can be said to be low.

However, the computational strategy will only determine if the specific criteria is satisfying in its own particular context. In order to get a more comprehensive view of the proposal it is necessary to evaluate the specific criteria in relation to the others, which calls for using the judgement strategy of decision making. The assessment of the venture includes an overall judgement in which the negative aspects will be addressed and counterbalanced with the positive aspects of the venture.

> *"Unexpected obstacles will always turn up, which have to be considered if they are possible to overcome, if not we will reject the venture."*

> *"There are upsides and downside to everything."*

The evaluation of a venture proposal may be complex, however the VCs were confident to receive an answer whether to invest or not from the figures provided by the analysis of the venture. This assessment could be said to be a mix of the computational strategy and the judgement strategy, since the computational strategy is appropriate to assess the specific criteria, i.e.

product/service, market and returns, and the judgement strategy in order to assess one criterion in relation to the others. By counterbalancing the criteria in relation to the other criteria, it is possible to evaluate if weakness in market could be compensated by strong advantages and characteristics.

The starting point of the 2nd evaluation phase is set by the time when the VC develops an emotional commitment to the proposal. However, the main issue of this phase in the decision making process is not to establish the transition between the first and second evaluation phase, rather it is to specify the obstacles based on the assessment in the previous phase, and how to overcome those obstacles. Without the intention of trying to bore the reader of the thesis, the strategies being used in the 2nd evaluation phase are the same as in the 1st evaluation phase, i.e. the computational strategy as well as the judgement strategy. The previous stage clarified the different obstacles that need to be solved in order to for the VC to make an investment proposal to the board of the venture capital firm.

> *"When reaching this phase the aim is to deal with the questions that has arisen during the process and hopefully to solve those questions."*

As mentioned before all the VCs were aware of the fact that the person who is involved with evaluating the venture, quite easily could be too committed in a way that investment manager are unable to be objective.

> *"It is easy to be blinded in the process of working full time with evaluating a venture. I find it very important to get a 2nd opinion from a person outside the project who is not as emotionally involved as I may be."*

> *"You have worked intimately with the entrepreneur over a period of time which makes it hard to realise that there are to many problems to deal with. You do not want to see all your effort going down the drain."*

It is interesting to note that previous studies in decision making have shown that too much information may bias the investment manager in the way that cognitive overload and story incoherence occurs as more information becomes available it is more difficult for the decision maker to interpret each piece of information (Pennington & Hastie, 1986).

As stated earlier in the analysis, the closing phase is when the board formally confirms the actual decision. However, we could see from our empirical studies that the informal decision almost always will be confirmed by the investment committee, which makes the formal decision whether to invest or not.

Butler et al (1993) argued that the different strategies in the contingency model would interact during a decision making process. The interaction between the different strategies is clearly shown, however, there are significant differences of interaction between the different stages of the decision making process as well as within the different stages.

We tend to regard investment decision making as a rational process of resource allocation, although in reality, decision making may be somewhat less ordered and rational than supposed.

CONCLUSIONS

When facing the end of our thesis work, it is obvious that the model of venture capital decision making is inadequate to obtain a comprehensive understanding of how a decision evolve in the process of making a decision. We will start this part of the thesis by reflecting on the decision making process in the venture capital firms.

THE OUTLINE OF THE DECISION MAKING PROCESS

In order to get a more comprehensive view of the decision making process we have tried to connect the different criteria to each step of the process. When looking into the case companies it became obvious that they had certain criteria, specific to the individual company, which needed to be met in order for the venture proposal to be further evaluated.

Case companies who invested in the seed and start up stage tended to be focused in a certain industry, i.e. Internet, media, biotech. By specialising, the VC believed to obtain certain success factors, which will benefit both parties. First, since the VCs have an enhanced knowledge within a specific industry this will help the VC to increase the possibilities of understanding the ventures applying investment funds. Hence, giving the VC greater opportunities to make better investment decisions. Second, the venture will benefit from the expert knowledge due to that the VC is able to add value, based on their industry related knowledge. The case companies who had a more diversified investment focus, added value by their expert knowledge in company development. Ventures in the expansion phase have additional historical data to build the investment decision on. Thus, it is easier to assess the venture due to the guiding information of the historical data.

When looking at the different criteria in the different stages of the decision making process it has become clear that the criteria used in the VC-specific screening, generic screening and the introductory part of 1st evaluation is of a non-compensatory nature. This means that if one dissatisfactory criterion is found when assessing the different criteria, it will ultimately lead to a rejection of the venture proposal. The reason for this is that there is need of narrowing down the amount of suitable investment objects in the first stages. It is not practically manageable to facilitate to many proposals in the latter part of the process, i.e. the evaluation stages. It is of greater interest to conduct more thoroughly analyses than analysing more proposals.

In the latter part of the decision making process the criteria that are emphasised are assessed in a more compensatory manner. During the assessment of the venture certain issues will always come up, however, by counterbalancing one criterion with the other, the VC are able to find satisfactory solutions to the occurring problems. It has become obvious that the most important criterion is the entrepreneur/management criteria. The VCs are very eager to see that the entrepreneur is able to fulfil the high expectations needed to manage a successful venture. Moreover, we have realised the interaction between the VC and the entrepreneur are sensitive towards any bad performances of the entrepreneur. It could be that the entrepreneur fails to meet the expectations of conducting a product analysis, which could lead to a rejection of the proposal. Thus, the confidence of the entrepreneur will ultimately be affected.

We can conclude that it is hard to retain complete information of all the different criteria since the VC is struggling with the problem of adverse selection, i.e. when one of the parties is better suited to determine the quality of the product or service than the other. The gap between the parties is one of the main reasons for the VC to aim of having a sophisticated decision making process in order to decrease the information gap. However, it is not likely to believe that the optimal solution could be found. Therefore, some shortcuts needs to be taken to reach the decisions will be used. Thus, focusing on satisfactory solutions when assessing the different criteria.

The attempt of obtaining a comprehensive understanding of the venture proposal should be approached with the awareness of the hitches which can evolve during the process of assessing the venture. From the VCs point of view, the understanding of the venture will enhance the better they get to know the entrepreneur. The more the VC understands the easier it is to make a decision whether to invest. However, it is a well-recognised problem of favouring the venture in the process of assessing the venture. Over time, a close relationship between the investment manager and the entrepreneur inevitably evolves, which in turn might result in subjective decisions. However, the VCs therefore maintained the need of letting several investment managers to evaluate the proceedings of the assessment.

COPING WITH UNCERTAINTY

During the process of this thesis we have tried to discover the key issues of decision making in venture capital firms in their quest of finding ventures suitable to invest in. The use of the term ‘suitable’ implies that the decision to invest cannot be said to be a strictly rational one. Being an investor of monetary funds assumes that when looking for investment objects, the obvious alternative would be to invest in the venture that could offer the highest possible return on investment.

However, it has become apparent that venture capitalists investing in the early stages have voluntarily chosen to expose themselves to a high level of uncertainty. These due to that there are tremendous opportunities if being able to identify the success stories among the numerous ventures applying for venture funding. The level of uncertainty must be seen as high in each and every of the different investment criteria, this since the ventures may have not made its entrance on the market yet, in some cases the venture do not even have the product or service fully developed. Moreover, the historical background of the venture, and the persons behind it, is often limited. On top of this there is a tendency to invest in intangible assets, i.e. know-how and people, which is more difficult to assess in order to evaluate the true potential of the venture.

All together it becomes fair to say that being a venture capitalist involves facilitating the uncertain environment of the venture proposals. Hence, in order to reach a comprehensive understanding of venture capital decision making processes, it was important to establish how the uncertainty is facilitated by the decision making process.

The decisions are usually based on information that is biased in one way or another. To make decisions in this environment is difficult, to make the optimal investment decision even more difficult, if not impossible.

The use of a decision strategy can be said to be dependent on the VC's prior expectation of the quality of information he/she can obtain. If the decision maker does not expect to obtain accurate, reliable and valid information then the VC will choose a decision strategy that will require lesser information gathering and processing. Therefore the chosen strategy should normally mirror the level of uncertainty surrounding the venture since it influences the VC's perception of the uncertainty involved. This indicates that the VC ultimately should be affected by the uncertain environment, involved in venture capital decision making, in his/her decision making.

As our case study showed the VCs mainly uses the computational and the judgement strategy assuming to have clear preferences as to the ends to be reached and more or less about the means of reaching those desired ends. However, it is important to note that the chosen strategy aims to reduce the many venture proposals that arrive into manageable entities. Even so, this reduction should not be done in a randomised manner since the key issue to use certain criteria, such as focusing on a specific industry or geographical locations which is used in the VC-specific screen, to single out the, to the specific VC, suitable ventures. Thus, to use a metaphor, by ignoring the dark the VCs are able to focus on selecting the stars.

The generic screening is facilitated in a similar way by using the judgement strategy of decision making. By using the satisficing approach, i.e. using a certain minimum performance criteria which need to be fulfilled, the VC is able to deselect the ventures that do not satisfy these criteria. The aim is not find the most optimal solutions, it is the ability to avoid a final investment in ventures which might be a waste of time, effort and eventually funds.

As the assessment of the venture becomes more complex in the 1st and 2nd evaluation phase the VCs tended to blend the strategies of the computational and the judgement strategy, however this might be due to the fact that the aim of the decision making process has changed from being a tool of reduction to a tool to assemble the information needed in order to make a proper decision whether to invest or not. Hence, to maintain our career within the metaphorical industry, after selecting the stars in the previous stages the 1st and 2nd evaluation phase aim to assemble the stars into star signs, i.e. entities.

We would like to sum up our findings in the area of venture capital decision making with the following arguments. It is not possible for the VC to obtain a comprehensive view by considering all possible alternatives, rather the VC uses "shortcuts" to reject many of the venture proposals. This cannot be said to be the most suitable way of finding the optimal investment objects, however, we believe that it could be seen as the optimal way of finding suitable investment objects.

IMPLICATIONS

Although other theories have been used during the process of writing this thesis, there has been a focus on the contingency model. We have concluded that the contingency model to certain extent can explain why the decision making model is conducted as it is. However, we have also realised the shortcomings of the contingency theory.

We believe that one shortcoming of the contingency theory is the fact that it does not manage the decision environment, which also must be seen as an important factor. The strategy that will be selected in the contingency theory model is also influenced by the general, situational factors regarding the decision task environment. Additionally, the environmental factors must be seen as dynamic and therefore, every time a decision has to be made on a strategy selection, certain critical factors have to be considered.

Studying the decision making theory in relation to the contingency theory has involved many problematic issues such as interpretations of empirical data in relation to the theoretical models. However we feel that we have developed a fairly comprehensive understanding of venture capital decision making.

Standing at the finish line of our research we would like to redefine the quote where they state by Östen Ohlsson & Björn Rombach "Res Pyramiderna, p 215" (Svenska förlaget, Stockholm):

> *"Coming this far in our career of research, we are tired of answering the question whether we succeeded to fulfill our purposes our not. Try to answer it yourselves and you will find out how funny it is since we have been doing it for the last 1½ years ;-)"* *Modified quote*

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APPENDIX I

Case Companies

Company A

Case company A's aim is to support strong, motivated entrepreneurs with a unique business plan and an exceptional understanding of the market. For them support means not only financing the project. They also support in creating a momentum by using experience and network in the daily work with their ventures.

Company A is a fairly large player when discussing venture capital in Sweden. The company focus their in an early stage, which gives them a higher risk profile. Most money are invested in the IT-sector, all though there is exceptions. Timing is one important part of the operations and speed is an extremely important factor. This company focus on the Nordic countries and all the investment should have the goal to be internationalised.

The decision making process in company A characterised by high level of trust to the single investment manager. He/She has the right to judge whether the investment process will continue or not. It is only very late in the process other people in the company are into the decision. Nevertheless, the person we interviewed mentioned the second opinion as one important factor in the process.

Company B

Case company B views themselves as a player with long-term perspective. They focus their investments in a small part of the IT-industry. They see their specialist competence as a competitive advantage, which give them a possibility to also understand the market instead of working as consultants with the management. Due to the fact that this company is very young they might have to be a bit broader when their specific area is not fashion anymore.

They can help the companies to create an international network, further develop their management skills and last but not least finance an expansion. Through the company's support they can create a better way to be successful. The company are present in the Nordic market and are trying to establishes themselves in the USA. The company never invest in later phases, nevertheless, they are very active trying to find new investors.

It is interesting to reflect upon their decision making process. This company has a very tough scanning in the first phases and almost 90 % of the companies will be rejected here. It could be questioned if there will be any lost possibilities or due to the fact that they are very specialised they might have the knowledge to reject the proposals earlier. They work very intensively with an investment committee where all sort of older, experienced people are represented.

Company C

Case company C is listed on the Stockholm stock exchange and has therefore a lot of share holders. The company supports young companies to get as god business atmosphere as possible. The company invest money in innovative companies with international potential. As case company B they are also looking and trying to imitate the best American venture capitalist because they have a lot of experience and are seen as the best in the world.

The company invest in the Nordic market and has precisely opened a office in Copenhagen. They focus their investment in the seed-start-up face and mainly in the IT- and biotech-sectors, all though there is investments in more traditional industry, too. They started their business in the middle of the 1990s and has get through o general re-organisation.

The decision making process in Company C is rather standardised in the beginning and becomes more and more irrational in the last phases. They have a system when an analyst and an investment manager working together and therefore get more objective picture of the investments.

Company D

Case company D is a middle-sized fund and were started couple of years ago. They mainly invest in the TIME-sector, all though their investments at the moment are focused in the IT- and media-sector. The company has the aim to create networks and other possibilities to built relations to bigger more established companies. They invest both their knowledge and money in the company. They never charge their portfolio company when helping them with consultancy like support.

The company wants to have at least 10 % but not more then 49 %. The reason is that the they are not doing the business they just support it. The entrepreneur should also have a quite huge part of the company in order to be motivated to work really hard. They invest in early-phases like seed and start-up mainly in the Nordic area. They have large institutional investors in their first fund and in their next fund they will have about five investors. The owner are two large Swedish industrial companies.

This company has a process that, firstly, starts with an analyst that screens the proposals. Secondly, they leave the proposal to the investment manager and furthermore the investment decision is made by a board. Although it could be discussed who the decision-maker is.

Company E

Case company E-s business concept is to identifying interesting projects and invest value-added capital. They normally invest in early stages but sometimes they do follow-up investments in already existing portfolio companies in later phases. The venture should have the possibility to be a world-leading company in their specific field. At the moment they focus on IT and life science.

Case company E are listed on the exchange and were founded in the 1980s which makes them being one of the oldest venture capitalist in Sweden. They rarely invest outside Sweden. They do prefer when the entrepreneur has a large part of the share in the company due to motivating factors. The personal is the main investors.

This company has a bit different approach. They use experienced investment directly. The arguments is that they might lose any possible investment due to the fact that a less experienced analyst can make false decisions. However, it will be much more expensive to use this approach.

Company V

The aim for case company V is to encourage profitable growth and innovation in the Swedish business sector. This company working both with equity capital and loans to small and medium sized companies. Company V is the only of our case companies that lends money to the entrepreneurs. They focus normally on the expansion phase. Their business is in some sense affected by the fact that the state has put in money in the beginning. All though they view themselves as profit-maximise.

The company does not only provide the ventures with capital they also invest there managerial skills. This company also invests in other venture capital funds. This company prefers to be a complement to another investee, which makes them to do syndication. At the moment they have about 80 syndicated ventures. The company was founded in the late 1970s. the company is owned by a foundation. This companies process is very standardised compared to the other and as far as we can judge their analysis are known as very reliable. The CEO mentioned that there has been problems with other VC firms that "steal" their cases just before they should invest in them. The other VC can offer them a better price.

Company X

The case companies X is investing money mainly in the expansion phase and their investments is primarily in Sweden but the try to expand their business to among others UK. That should be done to make it easier for the companies to internationalise and using an international network.

They have developed their own method, which they used when supporting the ventures. This method is much more focused on the relationship with the possible customer and demand from them then for example the financial figures or the entrepreneur himself. This company was the only that not clearly stated that the entrepreneur was the most important factor. Conversely, they stated that the product was the single most important. Their process is much about finding the low-priced ventures and it is not about only finding the best ones.

Organisational change is one important role for company X. they work in a long term perspective and support the ventures with management and finance in that order. The company never work on technical level. The money are invested by private persons. They have a more diversified strategy.

Company Y

Case company Y business concept is to create growth of value by long term investments in unlisted companies. They invest in the expansion phase and their aim is to have an active ownership. Their geographical focus is in the Nordic market. They see themselves as diversified venture capitalist and decrease the risk with spreading out the investment in different industries.

The company has been around since the beginning of the 1980s and has a lot of experiences when it comes to IPO. This company is owned by one large investor and a few smaller once. They are working much with building companies instead of working on a more specific level.

Their process is characterised by one investment manager who has the responsibility for the case and after that will an investment committee continue. It is interesting that a fairly large amount of proposal will be rejected late in the process. The arguments are often that we have to learn to know the entrepreneur and his company.

Company Z

Case company Z provides capital to ventures in the expansion face. They have a huge international network for example through their owner and their investors. The venture can and should use this network. They invest their money in the Nordic market and has no preferred industry. They could be seen as diversified.

Their work in the ventures is mainly in the board. Rarely they work in a more operative manner. The employees have a broad experience from the industry and should be able to understand complex tasks in the single ventures. A financial player mainly owns this company. Their process is relatively standardised in the beginning and are like many of the other VCs focused on the trying to eliminate as many as possible early.

APPENDIX II

The research process

The thesis-process started in May and at the beginning we were interested in writing about the Merger & Acquisition in Swedish IT-companies. After much work trying to get case-companies we realised that we might have asked for too much. All the companies we asked rejected our proposal. We understand that the companies had too much to do, were afraid of being compared with other companies and did not want to share sensitive information with us. Afterwards, it became apparent that our thesis proposal missed a sales pitch. With the knowledge from our first attempt we decided to look for other alternatives, i.e. change our subject. When discussing our dilemma with Björn Alarik, who came up with an interesting area namely venture capital, we both felt an immediate interest. This area was satisfying because it is a new area which has attracted a lot of interest in recent time, and there were not too much written about in the field of venture capital.

In the beginning of September we had an informal interview with professor Hans Landström in Halmstad. Since being a professor specialising in the field of venture capitalists, although the informal ones, he contributed with a lot of feedback and experiences in the area of venture capital and also possible ways to conduct the thesis work. The brainstorming with Prof. Landström has been a great contribution and offered fruitful learning at a very early stage of the thesis work.

During the whole autumn we have discussed our thesis with our tutors Björn Alarik and Torbjörn Stjernberg. The tutoring sometimes raised more questions than giving answers to our confused minds, however the final result of our thesis made us realise that your guidance have been extremely valuable.

Our first intention was to observe an entire decision making process at one specific venture capitalist firm, how did a venture capitalist process a venture proposal, much due to that this kind of survey had never been conducted before. However, we soon realised that the confidentiality towards the rejected ventures stopped us from conducting such an approach. After trying to get "Innovationskapital" as our case company, we realised after a while that we had to look for new ways of doing our thesis due to the fact that time was running out. Our third attempt was to get about ten one-hour interviews from different venture capitalists. This will be further described in the empirical part of the methodology.

The empirical Study

To study the reality from a totally objective point of view is probably impossible. Our values and earlier experiences will ultimately affect the study in various ways. The observation will be filtered through structures unique for each person. We will make conscious and unconscious "interpretations" of what we have observed.

Comprehending the problem of subjectivity is probably the best way to reach a high academic level. It is important to openly show the result and also the interpretations that has been done. The reason for this is that other people must be given the opportunity to understand our reasoning. We could say that the objective probably does not exist. Subjectivity must be used in a professional way to optimise the value of the research.

To understand the reality in an easier way it could be seen as socially constructed. The people will be form by the reality and the reality will be form by the people. The reality will be built up with a combination of the people actions and their surroundings. The single person perceive the reality in a certain way over time which will be institutionalise and become a social reality.

Interview-method

Yin (1994) reflects upon when it is appropriate to use case study as the research method. He concluded that "case studies are a preferred strategy when "How" and "Why" questions are being posed, when the investigator has little control over the events and when the focus is on contemporary phenomenon within some real-life context". Our research questions are "How does the decision making process look like" and "Why does it look like that" which makes the case study most applicable. The decision making process are a phenomenon that continuously goes on which favour the case studies, too.

According to Yin (1994) there are six different ways to handle a case study. We used one of them, namely interviews. He means that is one of the most important sources. It could be questioned if interviews are a survey method or a case study method. But as far as we think it is not really interesting to classify if we are doing a case study or not.

Nevertheless, we have concluded that what we are doing is similar to what Yin defines as interviews with an open-ended nature. Merton et al (1990) means that there is a type of interviews called focused interviews. He describes it as "a person is interviewed a short period of time, one hour for example. In such cases the interview will still be open-ended and assume a conversational manner but you are more likely to follow a certain set of questions derived from case study protocol". The last description is what we have done. Nevertheless, we felt like longer interviews would most probably increase the reliability of the thesis. But due to the limited amount of time the venture capitalist had to offer, we had no options.

The primary methodologies used to identify criteria were connected to the concept of verbal protocols. The interview involved was the so-called "thinking aloud" when performing a specific task. Verbal protocols have been used extensively including problem-solving and decision making with a high grade of success.

In quantitative research there is always a discussion about how to make the sample. Our study is a qualitative study, which gave us some freedom when searching for the companies. The negative side of the qualitative analysis is that it is hard to generalise from the result. You can only draw conclusions in the investigated companies. Nevertheless, at the same time we could benefit from understanding the problems on a deeper level.

We e-mailed about 50 venture capital firms, which we found on the Swedish venture capital associations homepage. The amount of positive responses from the VCs were really surprising. About 40 firms answered the e-mail and about 30 was prepared to let us interview them. Afterwards we understood that the key issue was that we only requested one hour of their time. Due to the fact that we focused on relatively large firms with a structured way of working and continuously make investments some of the VCs were dropped. Another important issue was that they had time in the beginning of October when we actually where in Stockholm. Most of the Swedish venture capital firms are situated in Stockholm, most likely due to that Stockholm is the largest city in Sweden and a lot of highly entrepreneurial incubators such as Kista is close by.

Between the second and the sixth of October we went to Stockholm to conduct our empirical studies. We made twelve interviews with venture capitalists. These twelve interviews were divided into two groups, one with three interviews which was more focus on the overall questions in venture capital an the other nine interviews was on a more specific level with our case companies. We followed an interview-guide with some overview questions. Nevertheless the interview often became more of an open discussion about decision making processes and the experiences the investment managers had made over the years. It is always a problem how much you should steer the interview. On one hand we need sophisticated information which should make the analysis more correct and easy to handle. On the other hand we do not want to steer the conversation to get the answer we wanted.

The interview-guide had four main topics, selection, criteria's, decision making process, the final decision. During the interviews we had very different strategies. Some of the people we interviewed were very well prepared for the interview which decreased the importance of us as interviewers because they answered our questions without us stating them. Others was not prepared at all which gave us a more important role to structure the interview without steering them too much. Yin discuss this issues and warned for asking leading questions which often become the case.

We videotaped it all, except two, due to the fact that it was against the company's policy. We feel like this method was really effective, especially because it was much easier to analyse the information afterwards. Before we had some doubts if the camera should affect the person we interviewed. But it felt that it does not take too long time before he/she forgot the camera. We typed the recordings in bullet-points due to the fact that we did not find it valuable enough and to time-consuming to type it word by word. It has been a huge advantage to be able to make a video-recording instead of just audio-taping it, mainly because it is easier to remember the situation when seeing the picture. The body language etc. The interview can be analysed again and again with almost the same feeling that were present when doing the interview at that particular moment.

Even though we are not experts, in one or two occasions, we felt that the person we interviewed was telling us the companies' official policy instead of telling us how it really was. This is major problem with this kind of investigations due to the fact that there are sometimes incentives of not telling the naked truth. The people who were interviewed had different positions in the company, which also might affect and bias the end-result. We can also reflect upon the fact that we discussed both from single investment perspective and more general question, which gives a broader perspective Our aim was from the beginning to focus on cases in the companies but it was difficult to get these facts due to confidentiality.

Our focus was aimed to the rejection of proposals before the interview. We had some hypothesis about for example that the reason for rejection was different in different stages in the decision-making process. However, we soon realised after a few interviews that it was very difficult to get a comprehensive picture why a company did not get money. We tended to get somewhat ambiguous answers like the product was not unique enough, the entrepreneur was not preferable etc. This made us realise that we in some sense had to develop our research questions. When using the other approach, i.e. asking why the companies where successful in different stages it was easier to get interesting information.

The focus has developed and now the whole decision-making process is analysed. Do we really measure what we wanted to measure? This is one of the most frequently asked question when discussing methodology. It is our belief that we had reached a common understanding of the area before we collected the material, for example through the meeting with Hans Landström. We have been able to discuss the framework with our case companies, asked the necessary follow-up questions and have consequently reach a, as far as we can see, valid result.

Theoretical Approach

To choose what theories that are important for our thesis is always a difficult problem. During the process the framework has been developed continuously. Our specific theory about venture capitalist decision making process has been more or less the same but our general theory about decisions has been further developed almost every day. There are so many applicable theories that we have to concentrate on a few of them, which hopefully is the most useful ones. During the thesis we changed the focus areas, which naturally affected the usefulness of the theories. The theories in our framework mainly discuss how we take decisions and how VC can take decisions with almost no historical information and a high level of uncertainty. To use knowledge from similar cases might be solutions but the external as well as internal factors such as the economic environment, the substitute etc., will change over the time.

Our ambitions before the thesis start was to push the research about venture capital a tiny little step further. If we succeed or not is hard to analyse. However, we have put as much effort as possible into this thesis, which makes us believe that we at least learned a lot from the thesis-work. It will benefit us in our future career in the busy and constant changing environment that management consultants work.

During the whole thesis-process we have tried to write in an understandable way. We have read so many reports that are written in a very abstract language during our years at the university. It seems like that it gives academic status to write as complex as possible. However, when you knew fairly much about a subject you have a hard time to understand how other people interpret what you are writing. The people we aim to write for is students with a rather high competence in management-issues. We have excluded all kinds of simple theories due to the fact that it is not helping our cause in any way.

The approach of the Analysis

The analysis was made in two parts, where the first one focused on answering the first purpose in the study, which is about comparing the VC theories with our empirical findings and trying to integrate the criteria into the model. Our aim was to develop the VC model because no one has, as far as we have seen, done that before. It will increase the relevance of the study and justify that the study is made.

The second part has as its purpose to reach an understanding for the decision making process in VC firms. It will be done with support from a classical decision-making model created by Thompson & Tuden (1956) called the contingency model. The model is based upon four different kinds of aspects namely inspiration, computation, judgement and negotiation. These different approaches will be used as explaining factor for the decision making model and reach a more dynamic model.

APPENDIX III

Intervju guide

Urvalet

Hur många propåer får ni per år?

Hur många tar sig igenom första screeningen?

HUR MÅNGA LEDER SLUTLIGEN TILL EN INVESTERING?

Bortsett från första screeningen var sker de flesta bortfallen under resten av processen?

Hur många av de propåer ni får in var refererade?

Hur stor andel av de slutgiltiga investeringarna var refererade?

Beslutsprocessen

Hur ser processen ut?

Vad händer i varje del process?

Är processen standardiserad?

Om ja, vad är standardiserat och hur (exempel)?

Sker stegen sekventiellt eller parallellt med varandra?

Kriterier

Vilka är kriterierna i varje enskild del av processen?

Kan vissa kriterier uppväga andra?

Om ja, vilka?

Kan brister i vissa fall avhjälpas för att på så sätt möjliggöra en investering?

Förändras avslagskriterierna under processens gång?

Beslutet

På vilka grunder tas beslutet att tillstyrka/avslå?

Upplever du att det är någon skillnad mellan avslagskriterier och framgångskriterier?

Vem/vilka tar beslutet om avslag eller tillstyrkan vid screeningen?

Vem/vilka tar beslutet om avslag i en senare del av processen?

Är det någon skillnad mellan tillvägagångssättet vid de olika besluten?

Tenderar kriterierna för avslag var annorlunda än de kriterier som fokuseras vid en tillstyrkan?