Understanding the Needs of Industrial Business Ventures with the Contribution of Active Investors

SEBASTIAN FRANSSON

MARK GUBAN
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Sebastian Fransson
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Master of Science Thesis INDEK 2017:101
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SE-100 44 STOCKHOLM
Att förstå industriella bolags behov utifrån aktiva investerares perspektiv

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Abstract
Early-stage industrial business ventures (IBV) have founders that often are experts in their technical field that the product idea is based on. These businesses have therefore somewhat unique, advanced products but founders tend to lack the education or experience in management that is needed. Since companies in the industrial sector need to develop their products that often require production, there is a significant need for capital at an early stage in these business ventures. A study of venture capital firms investing behavior in the Swedish market has shown, that these firms have moved towards later stage investments while the industrial sector also is the least popular sector among investors. The industrial sector has historically been one of the success factors behind the strong economic growth of Sweden and will be even important for the future growth. It is therefore of interest to identify the needs of industrial business ventures. In this thesis, a total of thirteen semi-structured interviews has been conducted. Six industrial business ventures have been interviewed to get a better understanding of each case and to identify what they view as their needs. The other seven interviews were with active investors to obtain a more unbiased, general view on the needs of industrial business ventures and to understand what requirements active investors have when they invest in a business venture.

The results of this thesis show that the needs of industrial business ventures can be divided into five categories, Capital, Education & Experience, Corporate Governance, Product and Professional Advisory. The results have shown that choosing the right market and being open to alternative business plans can be used to handle the lack of capital, and competence. Furthermore, receiving active investor funding can be of great importance to industrial business ventures but to acquire funding the company should be investment ready by fulfilling the active investor requirements.

Key-words
Industrial Business Ventures, Active Investors, Rate of Innovation Diffusion, Success Versus Failure Prediction Model, Corporate Governance, Needs.
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Sammanfattning
Industriella småföretag har grundare som ofta är experter inom ett visst tekniskt område, vilket innebär att de vanligtvis har unika, avancerade produkter men saknar utbildning och kunskap inom ledningen och styrning av företaget. Industrieföretag har ofta någon typ av produktion och behöver utveckla sina produkter vilket innebär att det finns ett stort behov av kapital i ett tidigt skede. En undersökning av venture capital bolagens investeringar på den svenska marknaden har visat att dessa bolag har börjat investera i ett senare skede och industrisektorn är dessutom den minst populära sektorn att investera i. Den svenska industrisektorn har historiskt sett varit viktig i Sverige och är fortfarande viktig. Därför är det av intresse att identifiera behoven hos dessa småföretag inom industrisektorn. I studien har totalt 13 semistrukturerade intervjuer genomförts. Sex av dessa har varit intervjuer med industriella småbolag för att identifiera vad de anser vara deras behov och för att få en bättre förståelse för varje enskilt bolag som undersöks. De sju övriga intervjuerna var med aktiva investerare för att få en mer opartisk, allmän syn på de industriella småbolagen och för att förstå de olika kriterierna som aktiva investerare har på industriella småbolag för att genomföra en investering.

Resultatet av denna studie visar att industriella småbolags behov kan delas upp i följande fem olika underkategorier, kapital, utbildning och erfarenhet, företagsstyrning, produkt samt professionell rådgivning. Resultaten har visat att val av rätt marknad och öppenhet för alternativa affärsplaner kan användas för att hantera bristen på kapital. Dessutom kan det vara av stor betydelse för industriella småföretag att bli finansierade av aktiva investerare, men för att få finansiering måste företaget vara investeringsklar och uppfylla de krav som ställs av aktiva investerare.

Nyckelord
Industriella småföretag, aktiv investerare, innovations spridning, förutsägelsemodell för framgång eller misslyckande, företagsstyrning, behov.
Foreword
This master thesis was written by Sebastian Fransson and Mark Guban at the Department of Industrial Engineering and Management at the Royal Institute of Technology, Stockholm, Sweden. This master thesis was conducted between dates of January 2017 until June 2017.

Acknowledgements
We would like to begin with expressing our gratitude to our supervisor at the Royal Institute of Technology, Stockholm, Sweden, Tomas Sörensson, Associate Professor in Industrial Economics and Management. Tomas Sörensson were able to help us navigate in many different subject areas. Sörensson proved to be an excellent supervisor by being able to inspire us even when we had doubts about how to handle and manage the complex problems we were facing.

Thank you Tomas!

We would also like to express our gratitude to everyone that helped us during this thesis, especially the thirteen respondents who were willing to help us by agreeing to be interviewed. Without their help, this thesis would have never been possible.

Every input and help along the way have been greatly appreciated, Thank you!

Sebastian Fransson & Mark Guban

Glossary of terms
Active Investor - Investors that in addition to capital add help their owned business ventures with activities such as corporate governance and recruiting personnel.
Business Venture (BV) - Small/Medium sized business company
CVC - Corporate venture capital
IBV - Industrial business venture
Industrials - Companies with a process, product, or service solution within the industrial/manufacturing sector.
MCS - Management control systems
PE - Private equity
R&D - Research and development
Value added - Improvements added by an active investor’s ownership, does not include capital
VC - Venture capital
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1. Introduction

This chapter provides a background on the subject that will be investigated, why this thesis is of interest, and the purpose of this thesis. Furthermore, a research question will be defined that this thesis aims to answer. Limitations that have been set and potential contribution from the findings will be discussed in this chapter.

1.1 Background

Stockholm has been widely praised as a startup hub and ranked as the second best on the "Top Ten Startup Hub" list of the world (Moon, 2016). Stockholm is the second city after London based on the EDC index, (European Digital City Index) an index showing how well a city is at providing support to digital startups (European Digital City Index, 2016). Moreover, the Swedish capital has the second highest numbers of unicorns in Europe (GP Bullhound, 2016). A unicorn is a newly started company with rapid growth through scalability, valued at more than $1 billion. Digital entrepreneurship is booming in the city which requires a vibrant venture capital environment for financing and supporting this high level of entrepreneurship (Kraemer-Eis et al., 2016).

The European Investment Fund (EIF) have stated that development of the overall economy regarding productivity and innovativeness are highly affected by the venture capital ecosystem (Kraemer-Eis et al., 2016). Venture capital firms’ significant role in the economy is shown by the amount of funding they have invested in Europe. In 2015, total fund raised by venture capital and private equity reached €47.6 billion (Invest Europe, 2015).

Venture capital (VC) invests in companies that are in a relatively early stage, but there is no particular stage when they invest. Swedish IT and Life Science are the two most popular industries for VC investments. In this thesis, the focus will be on industrial business ventures, a sector that received the lowest amount of VC investments in 2015 (Kroksgård, 2016). The largest part of the capital came from different Swedish state-funded funds, while private Swedish funds and foreign funds barely invested any money in this industry. Although most investments in the industrial sector came from Swedish state-funded funds, these only spent just over 10 percent of their total capital in this industry (Kroksgård, 2016). The manufacturing/industrial sector produced around 20 percent of the Swedish GDP in 2016, and between 1993 until 2010 it had achieved a rate of annual productivity growth of 5.7 percent, which is strong by international standards (Nauclér et al., 2012; Carlgren, 2017).

1.2 Problem Formulation

Founders of industrial business ventures are typically experts in one particular field while lacking education and experience in entrepreneurship and management, which are necessary for building up a business venture (Rasila, 2004). Furthermore, management is one of the factors in the S/F model by Lussier (1995). Studies have shown that entrepreneurs themselves feel the need of expert advice (Landström 1991; Rasila, 2004). The additional active investor added value activities are in some cases considered even more important than the provided capital (Rasila, 2004). The lack of knowledge in finance, management, and other skills that are needed to manage business ventures is called competence gap and is a prevalent problem for newly started business ventures (Rasila, 2004). While investments in the industrial sector are small, especially compared to other areas, the limited amount of available capital, called equity gap, will also limit business ventures in this sector (Kroksgård, 2016). Historically the manufacturing sector has been one of the main success factors behind the strong Swedish
economic growth and still represents a significant role in the country's future (Nauclér et al., 2012).

Active investors, such as venture capital firms, want to ensure that their money is properly invested and they are therefore interested in helping business ventures by using a broad range of value-added activities (Sapienza and Timmons, 1989; Davila & Foster, 2005). These activities are, for example, transitioning the business ventures board to a professional management structure as well as providing financial advice and capital to the business ventures to increase their growth (Davila & Foster, 2005; Sapienza and Timmons, 1989). Active investors are often funds backed financially by other investors who expect a return on their investment within a specific timeframe that often is 2-7 years (Martin, 2014). Some industries may be better suited and will be more attractive to active investors who can further increase the equity gap and competence gap for the business ventures in less attractive sectors (Rasila, 2004).

1.3 Purpose
The purpose of this thesis is to investigate the needs of industrial business ventures in Sweden and how active investors view these type of business ventures due to the lack of investor funding. Therefore, it is of importance to better understand how industrial business ventures work, what kind of problems they have, what structural obstacles are hindering them and how their needs compare to other sectors that receive more active investor funding. There is also need to understand better how active investors view these type of business ventures, how they choose their portfolio companies and what values they may add, to understand how industrials investments can increase in number.

1.4 Research Question
To fulfill the purpose of this thesis, one main research question will be investigated and answered.

“What kind of needs do industrial business ventures have in Sweden, and how can those needs be better understood with the perspective of active investors?”

1.5 Delimitations
This thesis will investigate the general needs of industrial business ventures and there will be no measurements or calculations done to evaluate the size of the identified needs. The focus in this thesis will be on venture capital firms and private equity firms.

1.6 Contribution
A study researching Swedish industrial business venture needs with active investor's perspective in mind has not been done before this thesis. Many studies have been conducted about various subtopics related to this thesis for example by Lussier's (1995) S/F model and about active investors value-added activities done by Sapienza et al. (1996), Lee and Wahal (2004), Brau et al. (2004), and Florin (2005). But the focus of this thesis makes it unique as there have not been done any studies that specifically examines the Swedish industrial sector. By conducting this research, a better understanding of the relationship between active investors
and industrial business ventures can be developed to align investor value-added activities to business venture needs. Hopefully, with a better understanding of how the two sides work, view themselves, and what their relationship looks like, their different perspectives can be collected and better strategically aligned to distinguish common ways to create value.
2. Methodology

This chapter will go through the research design and the choice of methodical approach that will be used to collect empirical data to fulfill the purpose and answer the research question of the thesis.

2.1 Methodological Approach

The purpose of this investigation is to understand the needs that the industrial business ventures have in Sweden. Qualitative interviews will be used in a semi-structured manner, with both industrial business ventures and active investors to get a better understanding of the subject. The idea of interviewing active investors is because they may provide extensive general knowledge about business ventures needs as they are providing value-added activities and improving businesses on daily basis (Sapienza et al., 1996). The answer to the research question, will in addition to the interviews also be based on past research collected from secondary sources and matched with relevant theories. Studies have been conducted on various topics that are related to the subject of this thesis, for example, the S/F model by Lussier (1995) that identifies key factors that are needed for a business to survive. Previous studies by Sapienza et al. (1996) and Brau et al. (2004) have explored active investors’ value-added activities. Interviews will be used to enable data collection and the building of case examples from both industrial business ventures and active investors. Yin (2013) and Baxter and Jack (2008) argued that case studies are relevant as they increase the understanding of complex problems. As the thesis will be of an explanatory character, the use of cases to investigate the subject in question will be an appropriate choice of the methodological approach according to Yin (2013) and Baxter and Jack (2008).

An investigation of only one business venture could result in misleading results since different industry segments, and specific business plans may have specific needs. Therefore, six industrial business ventures will be selected within different industry segments, to increase the generalizability of the results. In addition to the business ventures, seven investment managers from six different investor firms will be interviewed to get an additional perspective of industrial business venture's needs. The use of active investors may also provide a more unbiased view of the problem. Active investors invest in many different companies, and therefore they have more experience and knowledge about building a business venture, and can provide a more generalized view of what needs companies usually have. According to Lussier's (1995) S/F model professional advisory, including active investors is a success factor that minimizes the risk of default as they have knowledge in business management. By interviewing six business ventures and seven active investors, the outcome of the thesis will have a general nature that other industrial business ventures may be able to use. If limited time were not a factor, a larger amount of industrial business ventures would have been selected for interviewing, since it would increase the generalizability of the thesis.

2.2 Research Design

The empirical material will be collected and used together with theories and literature to answer the research question of the thesis as well as to fulfill the purpose. The empirical material that will be gathered in this research, is called explanans and is used to understand the problematization better, called the explanandum (Blomkvist and Hallin, 2015). Qualitative methods will be used in the form of semi-structured interviews to get a better understanding of how active investors and industrial business ventures view each other and themselves. The
semi-structured nature will encourage an open discussion and open for new unexpected findings (Blomkvist and Hallin, 2015). Interview question will be divided into two different sets, one specified for industrial business ventures and one for active investors. Both groups will receive general and case specific interview questions, based on previous research and theories. The results will be reviewed and analyzed based on previous research and management theories.

During this thesis, an iterative methodology will be used, meaning that key parts of the thesis such as problem formulation, purpose, and research question and the literature review will be updated and continuously developed (Blomkvist and Hallin, 2015). This will be combined with an abductive approach, meaning that we will alternate between theory and empirical observations (Alvesson and Sköldberg, 2009). In this approach, it is of importance during the whole process to understand both theory and patterns, which differentiate this approach from inductive and deductive approaches (Alvesson and Sköldberg, 2009). The iterative process and abductive approach is suitable for this thesis since it allows to alternate between observations and theory during the process and to understand and adapt to patterns that are observed.

Due to the difficulty of finding an adequate number of participants willing to help from only one type of investor group, several types of investors will be interviewed. Different views on the subject will increase the generalizability of the thesis. Corporate venture capital, venture capital, and private equity firms will be interviewed including private and state-funded investors. The focus will be on these types of investors as they are investing in roughly the same sized companies, sometimes working together, or competing against each other. The difference between these active investors is that they have somewhat different approaches on how they view their investments, themselves and what kind of investing strategy they are using. The different types of investors are connected to each other in the sense of how and in what stage they are entering or exiting a company and what values they may add while owning a portfolio company.

Data in the form of primary sources will be obtained by using the research method of interviewing to gather and develop a deeper understanding of the subject while also enable the possibility to discover and understand new aspects of the subject. Semi-structured interviews will be used as they both allow for the possibility of new discoveries while they still are somewhat structured (Blomkvist and Hallin, 2015).

In Figure 1 the connection between purpose, research question and method is shown in chronological order. At the method stage, a literature review will be conducted to find relevant theories and literature, followed by semi-structured interviews with industrial business ventures and active investors where the literature and theories are used to construct the questions.
Figure 1. The connection between purpose, research question and method is shown in chronological order. At the method stage, a literature review will be done to find relevant theories and literature. Based on the relevant theories and literature, interview questions will be formulated for both industrial business ventures and active investors.

### 2.3 Literature review

A literature study on past research will be conducted before developing the research questions, to build knowledge and also to understand what research has been done in this area previously. Relevant literature and theory will be collected from multiple sources and will include: Google Scholar, KTH Library, KTH Primo, and SSRN. Keywords will be used to find relevant research literature and theories like: "Value Adding Investors", "Venture Capital", "Private Equity", "Corporate Governance", "Rogers rate of innovation diffusion", "Angel Investors", "Agency Theory", "Corporate Venture Capital",

### 2.4 Qualitative Research

The thesis will be based on semi-structured interviews where six individuals from industrial business ventures and seven individuals from active investor firms will be interviewed to collect qualitative data. Collecting information through interviews will serve as a primary source of information and will be crucial to increase the understanding of industrial business ventures needs' in Sweden when combined with previous research and theories. A better understanding of the lack of active investor investments in the industrial sector, as mentioned by Kroksgård (2016) will be achieved and explained by the active investor interviews. Therefore, interviews with both industrial business ventures and investors will be conducted, that in combination with previous research and theories will provide a better understanding of both general business venture needs and needs specific for industrial business ventures.

To improve the reliability of the thesis interviews will be recorded and notes will be taken while conducting the interviews (Blomkvist and Hallin, 2015). Before the interviews, all participants’ approval will be asked for so that the answers can be recorded and later transcribed. The option of anonymity will also be offered before conducting the interviews. The used results from the transcripts will be sent to the interviewees for verification and approval of their answers (Blomkvist and Hallin, 2015). Before conducting an interview, the interview template will be forwarded to the interviewees so that they have time to prepare and get a better understanding
of the subject. A short declaration and explanation of the thesis goals will be given before the interview to increase the validity of the thesis (Collis and Hussey, 2013).

2.4.1 Interview design

The questions will have an open character to provide the flexibility needed to explore new ideas while also maintaining the structure for analysis to enable comparison between the interviews. These questions will function as guidelines and will also enable the use of follow-up questions, to get a deeper understanding of each topic the questions explores or to lead into previously unexplored subtopics. The follow-up questions may depend on the interviewed company's characteristics and the interviewee position in the company. They will also function as probes to clarify what the interviewee said. Probes are useful to compensate for the knowledge differences between the research and the respondent (Collis and Hussey, 2013).

An example question is provided below:

Example question to Business Ventures:

"How would you describe your level of satisfaction with the added value activities that the business venture has received from active investors?"

Example question to Investors:

“What kind of skills should the founders/business venture management have to get funded by investors?”

2.4.2 Research Target Group

The geographical focus of this thesis is Sweden and therefore the focus will be to interview business ventures and active investors operating in Sweden. There may be difficulties with finding enough industrial business ventures in one revenue size and development phase due to the lack of investments in this industry. Therefore, any business ventures regardless of revenue sizes and development phase will be an acceptable candidate. Business ventures with different revenues sizes and development phases will provide an increased generalizability. By interviewing industrial business ventures that are in various segments of the industrial sector, as they have different types of products, processes, and solutions, the thesis generalizability will be enhanced. The interviewees on the company side will be both CEOs, CFOs, board members and other strategic managers which further will increase the generalizability of the thesis. There will be cases when the board members represent both their company and an investor, and this might influence their answers. To minimize this potential decrease of reliability the option of anonymity will be offered in all interview cases (Blomkvist, Hallin; 2015).

Since investors have a different perspective than that of the board members', interviewing them may also lead to more unbiased results than if just the business venture representatives were interviewed and this will also increase the thesis reliability. As interviewing different types of active investors, it will mean that they invest in various phases of a company's development and this will enable the option of comparison of the investment manager's views, with that of the board members as they will be in different development phases. This will also further enhance the generalizability of the thesis. This solution will lead to an increased generalizability and also provide an efficient way of handling the possible low interviewee interest.
3. Investment Climate in Sweden

VC investments have been categorized into three different categories, the first one being state-funded investors, including Industrifonden, Almi Invest AB, Fouriertransform, Innovationsbron AB and Inlandsinnovation AB. The two remaining groups are foreign VC investors and Swedish VC investors that are not state-funded (Kroksgård, 2016).

The number of active venture capital firms investing in Swedish companies is decreasing according to an analysis conducted by Tillväxtanalys as can be seen in Figure 2. Looking at data collected from 2007 until 2015 the number of Swedish General Partners who invest in Swedish portfolio companies has dropped from 63 in 2007 to only 12 in 2015 which is an 81 percent decrease. The amount of VC investments had a peak level in 2008 with SEK 4.7 billion invested. After this peak, the investments fell continuously until 2012, reaching a level under SEK 2 billion. After that, the investments increased again but 2015 there was a 12 percent decrease from the previous year with the total amount of SEK 2.26 billion in VC investments (Kroksgård, 2016).

![Figure 2. Investments from active venture capital firms in Swedish companies between 2007 and 2015 (Kroksgård, 2016).](image)

The reason behind the decreased investments from the previous year was a decrease in foreign funds and a decrease in State-funded investments which can be seen in Figure 3 (Kroksgård, 2016). Swedish private funds did not follow this trend, as they instead increased their investments in 2015 from SEK 0.31 billion to SEK 0.7 billion. Even though the Swedish private VC investments increased in 2015, investments in this group had decreased almost every year from the peak in 2008 when the total amount of investments was approximately 3 billion SEK (Kroksgård, 2016).
Like all previous years, looking at the data from 2007-2015 most of the VC investments in Swedish companies is acquired by the IT and Life Science sectors. VC investments from foreign funds place 74 percent of their investments in these two sectors. Investors have also started to focus on a few specific sectors that are high-tech and life-science where investment have increased from 72 percent to 84 percent between the years of 2007-2014 (Svensson, 2017). Foreign, Swedish, State-funded have invested 95 percent, 90 percent, and 61 percent respectively in the high-tech and life-science sector in the year 2014 (Svensson, 2017). Swedish governmental funds place 76 percent, and other Swedish funds put 48 percent of their total investments in IT and Life Science sectors. Foreign funds invested 611 million SEK in the Swedish IT sector 2015 which was a decrease with 409 million SEK since 2014. Companies in business and industrial products are the least popular companies to invest in, as can be seen in Figure 4 (Kroksgården, 2016).

Figure 3. Difference and changes in investments between state-funded, foreign and Swedish private venture capital firms from 2007 to 2015 (Kroksgården, 2016).

Figure 4. Investments of various VC investment types in different Swedish sectors (Kroksgården, 2016).
When it comes to investments in different phases, there have been small changes since the previous year. The various stages of a company's growth have been divided into 4 phases, seed, start-up, launch, and expansion (Kroksgård, 2016). Seed is the first stage of investment including investments for research, judging, and development of an initial concept. The start-up phase includes investments to product development and initial marketing. In this stage, the company in question have not initiated the sale of its products. The launch stage is when a company has a finished product that needs capital to begin marketing, production, and sales. Expansion refers to investments in the stage of a commercial company where the company tries to grow and receive a larger market share by selling more products or services. Companies often have received previous VC investments in this stage (Kroksgård, 2016).

Investments in the expansion phase are continuously the most popular. Between the years of 2007-2014, start-up phase investments decreased from 45 percent to 12 percent of the total amount of invested capital in Sweden (Svensson, 2017). VC investment has dropped from 4.5 billion SEK to 1.2 billion SEK between the year of 2008-2013. Private VC investments moved away from the early seed phase investments towards the later expansion phase investment (Svensson, 2017). Investors have also started to focus on a few specific sectors that are high-tech and life-science where investment have increased from 72 percent to 84 percent between the years of 2007-2014 (Svensson, 2017). Looking at the launch phase and start-up phase it was marginally more popular to invest in the start-up phase in 2015 as seen in Figure 5. The most recent years it has been more popular to invest in the launch phase compared to the start-up phase. Back in 2007, the start-up phase was the most popular phase to invest in, but it has decreased ever since, becoming less popular than both the expansion and launch phase. However as mentioned, that changed in 2015 when the start-up phase was marginally more popular than the launch phase that had the largest decrease of all the different phases. As every other year, the seed phase was the least popular phase with barely any investments as seen in Figure 5 (Kroksgård, 2016).

![Figure 5](image)

*Figure 5. Total VC investments in different growth phases in Swedish companies between 2007 and 2015 (Kroksgård, 2016).*

Looking at what different phases VC firms invested in 2015, foreign VC firms were most interested in investing in the Expansion phase with 74 percent of their total amount of investment, seen in Figure 6. It can also be noted, that foreign VC firms were the only VC firms
investing in the Seed phase, but only 1 percent of the total amount of investments were invested in this phase. Swedish VC firms did also invest most in the expansion phase with 57 percent followed by the startup and launch phase. State-funded VC firms had almost the same amount of investments in the startup (41 percent) and expansion phase (40 percent) followed by the launch phase. The amount of investment placed in the launch phase were almost the same for all three VC firm categories (Kroksgård, 2016).

![Figure 6: VC investments in different phases of Swedish companies 2015, divided between the state-funded, foreign and private Swedish VC firms (Kroksgård, 2016).](image)

Swedish's GDP per capita is strong and has outperformed the EU-15\(^1\) since 1993 where the manufacturing industry was the main engine of growth between 1993 and 2006 (Nauclér et al., 2012). It is common to assume that the economic future of Sweden is within the services sector and manufacturing jobs will be lost and be replaced in low-cost countries (Nauclér et al., 2012). Since the manufacturing industry was the sector with most growth between 1993 and 2010, it is suggested that the discussion should be focused on maintaining future growth in the service sector as well as the manufacturing sector (Nauclér et al., 2012). State-funded have only invested 46 percent of their total available investable capital (Svensson, 2017).

A report by Svensson (2017) has mentioned that upon asking business ventures what kind of source capital funding they preferred, venture capital as the source of financing was not preferred and ended up at the end of the list. Business owners prefer to maintain their level of ownership in their business ventures (Svensson, 2017).

\(^{1}\) The EU15 were the fifteen EU members before 2004 when ten new countries joined the EU. It was comprised by following fifteen countries: Austria, Belgium, Denmark, Finland, France, Germany, Greece, Ireland, Italy, Luxembourg, Netherlands, Portugal, Spain, Sweden, United Kingdom
4. Literature Review

In this chapter, previous studies and existing knowledge are presented about different kinds of active investors and what kind of value-added activities these active investors contribute with. Further, previous studies will be presented, showing how VC-backed firms’ efficiency and corporate governance practices are affected. Lastly, business venture needs will be presented. The aim of this chapter is to provide a basic understanding on what values active investors add and how those are connected to business venture needs. Figure 7 shows the relevant theories and literature that will be used to better understand active investors and their contribution to industrial business venture. The relevant theories and literature that will be used to better understand active investors include a subchapter about Type of Active Investors, the Value-Added by active investors and Corporate Governance for active investors and Efficiency of active investors shown in Figure 7.

<table>
<thead>
<tr>
<th>AI Theories/Literature</th>
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<tr>
<td>Type of AIs</td>
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*Figure 7. Theories and literature that will be used to better understand active investors and their contribution to industrial business venture.*

4.1 Active Investors

Sapienza and Timmons (1989) found that there are two main activities that active investors are providing to their portfolio companies. They monitor them to protect their investment while they also want to increase profits by helping them to grow and scale up faster by performing value-added activities. Investors that are involved in their portfolio companies and actively help them are therefore called active investors. Active investors do not only provide financing but also contribute with value-added activities by providing contacts usually about legal questions, competence to enable rapid growth and structural knowledge (Martin, 2014). The three different types of active investors are angel investors, venture capital firms, and private equity firms (Martin, 2014).

Active investors are sometimes funded with public money and are therefore non-profit while other actors are either individuals or private organizations funded by rich private investors or institutions with the aim to be profitable (Rasila, 2004). Rasila (2004) mentioned that in the earliest stages of a new company there are incubators and advisors like angel investors that are available to provide help and are paid for their services but these services will not be considered in this thesis.

4.1.1 Venture Capital

Venture capital can be either private investors that are investing their money or set up as a fund that pools funding from clients such as wealthy private customers or institutional investors. They invest in an earlier stage in startup companies compared to private equity firms (Martin, 2014). They usually own a company for a limited time frame of 2-7 years before exit, with a
specific claim of yield and a strong focus on growth, providing financial, legal and structural knowledge to the startup (Martin, 2014). They have close contact, 59 percent have weekly contact with the startup, VC partners are usually represented on the company board and are not involved in the operational part of the business (Mulcahy, 2013). Furthermore, they use capital from other investors and therefore have more capital compared to angel investors which enables a longer investment horizon. VC firms uses consortium agreement which is an agreement between two parts on what rights and obligations they have (European Commission, 2015). They describe themselves as value-added investors. VC firms may or may not own the majority stake of the companies they invest in depending on the particular company and what kind of strategy they use (Kleinschmidt, 2007; Mulcahy, 2013; Martin, 2014).

Venture capital firms have a great role in helping early stage startups by providing financing, strategic advice, help with executive recruitment and make introductions to potential customers to enable rapid growth of the company. All these value-added activities that VC firms provide besides funding is the reason why they are described as "value-added investors" as they offer not just capital but other well-needed services for startups. They can also have a more active role in a startup by taking on a role in the board of the company and by doing so help with the governance of the company (Haislip, 2010). VC firms may also go together to create groups called syndicates and whereby several VC firms invest together in companies by using equity (Haislip, 2010).

4.1.1.1 Corporate Venture Capital

Corporate venturing is the act of using a corporate fund to directly invest funds into a startup that are not part of the internal venture, distinct of existing corporate core business with some level of organizational freedom (Chesbrough, 2002). Corporate research and development are usually only focused on developing and refining already existing technologies since creating radical innovations in big corporate environment can be difficult. Therefore, creating new products based on new technologies may need a different approach. The opportunity to use corporate venturing, the act of investing in startups as a corporate, may offer new ways of innovation creation (Lerner, 2013). Venture capital firms have a narrow focus mainly investing in a particular sector, while crowdfunding may also provide a source of capital for both types of investing but there is a tendency both for VC firms and for crowdfunding to invest in the most "popular" projects. The more complex and resources requiring the projects of the business ventures are, the more difficult it is to get the well-needed capital boost to finance them (Lerner, 2013).

Today many corporates are acting as venture capital firms in addition to their primary operations. The motivation behind investing in other companies are many, to increase revenue, innovation or to get access to new markets and segments. Corporate venturing can move faster with a bigger flexibility than research and development in traditional corporates, while also offering the possibility to explore new segments cheaply (Lerner, 2013).

Corporate venture capital investment objectives can either be strategic or financial. The strategic objective is to exploit synergies between the two companies so that profits and sales can be increased. Corporate venture capital firms that are investing strategically may accept lower returns from these startups if its own business performs better as a result. An example can be an innovation, which is difficult to measure but an important source of future cash flows (Chesbrough, 2002). Financial objective is that the investing company is looking for returns on investment. The investing corporation may believe that it has superior knowledge regarding
technology, market understanding in that area they invest in compared to a venture capital investors and therefore perform as good as them or even better (Chesbrough, 2002).

4.1.1.2 Seed Venture Capital
Many venture capital firms have moved away from the classical VC model to instead focus on later-stage investments that in a traditional sense are associated with private equity investments. The operations done by VC firms in a more classical sense is today done by so called seed venture capital firms. Seed investments are made to small companies with high growth potential, and this kind of investments often comes from founders, friends, and relatives but can also come from seed VC firms. Seed VC investments are made when there is a promising idea with the aim to utilize the growth potential to reach a certain size or a value for a small company. Characteristics of this sort of investments are that the time horizon of the investments is long, high risk with a high upside. Since the target company is in an early stage, it is immature and often require small investments but instead a larger amount of attention from the investor. These mentioned factors are not optimal and interesting for mainstream VC firms (Rasila, 2004; Martin, 2014).

4.1.2 Private Equity
Private equity is mostly the same as venture capital, but they invest in well-established companies, enter at a later stage by doing something called "buyout", whereby they buy the majority stake in the company and develop it until they do an "exit" which by they sell of all their shares (Kleinschmidt, 2007). Rasila (2004) mentioned that there are no definite limits set to describe where venture capital investments end and where private equity investments start. Investments in this later stage are less risky compared to early stage investments but it also requires larger size on the investment. Investments in this stage do not need as much involvement and management skills compared to early stage investments. The grooming of the startup and the entrepreneurial skills it requires has already been done and so has different aspects within management. Because of the lower amount of involvement these later stage investments has started to become more attractive to VC firms as well (Rasila, 2004).

4.1.3 Angel Investors
Angel investors are wealthy private individuals usually with excellent industry knowledge, who invest their money in early stage startups, often providers of the first seed money. They provide limited funding for a limited time and are usually the first outside investors (Prowse, 1998; Martin, 2014). Angel investors usually provide sales knowledge in the industry for the startups they invest in. Furthermore, they are also involved in the operational parts of the startup. They are informal investors, so they do not use consortium agreements and usually invest in a shorter time than VC firms and they get their return on their investment from startup revenues (Martin, 2014). Angel investors typically invest in startups at earlier stages and therefore the number of companies they invest in are 16 times more than those that of VC firms in the US (Mulcahy, 2013). In 2011 angel investors has provided the startup capital market with more than $22 billion and invested in more than 65,000 companies, while VC firms have invested $28 billion in only 3700 companies (Mulcahy, 2013). These values clearly show how the two different types of investors complement each other in the growth of a company's lifecycle. (Prowse, S, 1998; Mulcahy, 2013; Martin, 2014)

4.2 Value-added
Sapienza and Timmons (1989) found that there are two main activities that VC firms are doing with the company that they have invested in. They monitor them to protect their investment
while they also want increased profit earning by helping the company grow and scale up faster by performing value-added activities.

Sapienza and Timmons (1989) have divided venture capital firms’ value-added activities into three main categories based on how much VC firms believe they can increase the value for the company. The activity that VC firms believe that they can add most value through is strategic activities followed by interpersonal activities and lastly networking activities.

- Strategic (acting as sounding board, providing capital, and business adviser)
- Interpersonal (acting as a confidant or mentor)
- Networking (acting as recruiter for managers, providing contacts with lawyers and professional consultants and contacts for suppliers and customers)

Previous studies from the Nordic market has revealed that in Finland entrepreneurs valued the financing and active oversight strategies as the most important for them (Ahdekivi 1990). In Sweden, a survey has shown that entrepreneurs appreciated access to capital, VC firms’ competence and moral support as the most important value-added activities (Fredriksen et al. 1990). A Swedish study by Landström (1991) has shown that there are four main types of active investor involvements on the market: consultancy based, mentor-based, operations based, and structure based involvement. Fried and Hisrich (1995) has described and labeled VC firms as "relationship investors" as the need for the proper relationship between the VC investor and the CEO are of great importance to create any value.

Research has shown that VC firms tend to increase monitoring to manage the agency risk, while CEOs with little experience are monitored similarly as experienced CEOs. The VC firms’ level of involvement does not change the level of satisfaction they have with recent venture performance. Most monitoring activities were done at early stages of the company lifetime to handle uncertainty, while VC firms with more experience from the venture capital industry required less interaction with CEOs than those with a background in the startup companies' industry. It was also found that VC firms add the most value to business ventures that are already well functioning. VC firms add the most value in cases where there is a high level of uncertainty and examples of that can be early stages ventures and ventures with an innovation strategy. VC firms can add the most value to companies that operate in an industry that the VC firm has previous experience in. (Sapienza et al, 1996).

Previous research has shown conflicting results about the level of value VC firms produce. Baum and Silverman (2004), Dimov and De Clercq (2006), Bottazzi et al. (2008) has shown that venture capital expertise add value to new ventures. On the other hand, studies by Lee and Wahal (2004), Brau et al. (2004), and Florin (2005) show no difference between VC-backed and non-VC-backed companies regarding before and after IPO performances. There is also a discussion whatever VC firms tend to pick winner companies that are already good instead of adding any value.

4.3 Efficiency and innovation in VC-backed firms

The difference in efficiency between VC-backed private companies and non-VC-backed private companies in the U.S. has been investigated by Chemmanur et al. (2011). Their results indicate that the efficiency overall is higher in VC-backed companies at every point in time. The advantages come from both screening and monitoring in the VC-backed companies. Chemmanur et al. (2011) show that before receiving any VC financing, the total factor
productivity is lower in companies backed by high-reputation VC firms compared to those backed by low reputation VC firms. High-reputation VC firms have greater monitoring ability, the increase in total factor productivity is significantly greater for companies backed by high-reputation VC firms compared to those backed by low reputation VC firms. Furthermore, Chemmanur et al. (2011) show that the efficiency gains due to VC backing increase the chances of a successful exit.

More active monitoring by VC investors results in higher level of innovation according to Bernstein et al. (2016). Bernstein et al. (2016) investigated how portfolio companies’ innovation and success were affected by the introduction of new airline routes that reduced travel time between lead VC investors and portfolio companies. Results indicated that reduced travel time not only gave reduced monitoring costs, but it also resulted in increased number of patents. Furthermore, it led to a higher chance of an IPO or acquisition. The study is based on lead investors involvement in a portfolio company. Indications from the results show that on-site involvement from VC firms results in more innovation for the portfolio company. Moreover, a large-scale survey was conducted by Bernstein et al. (2016) with VC investors. Close to 90 percent of respondents agreed that a direct flight would result in more visits to the portfolio company than indirect flights. They also agreed that it would lead to better understanding of the portfolio company and a better relationship with management. Hence, they can add more value to the company (Bernstein et al., 2016).

4.4 Corporate Governance for Venture Capital
When venture capital firms invest in a portfolio company, there are differences in the level of access to information between the two sides. Portfolio companies are better informed about their current situation. This situation of information asymmetry creates a high level of uncertainty. Meanwhile, protection from uncertainty in the form of capital, and other assets are typically low in the portfolio company (Kleinschmidt, 2007; Wright et al., 2013). When investing in a company venture capital firms face three type of agency risks: adverse selection (the portfolio company know more about its abilities then the investor), moral hazard (disagreement between venture capital and company management or the entrepreneurs do not working hard enough for value maximization) and hold on (valuable entrepreneurs can threaten to leave which is problematic) (Sapienza et al., 1996; Kaplan and Strömberg, 2004; Kleinschmidt, 2007). These potential agency risks together with the high level of uncertainty and the limited market oversight require the use of corporate governance practices by investors to manage the risks (Kleinschmidt, 2007).

In the early lifecycle of a startup there are mainly informal interactions between owners and employees, but at some stage, there is a need to change to more formal interactions. It has been identified that this transition point is critical in the growth of business ventures (Davila and Foster, 2005). When business ventures reach somewhere between 50 and 100 employees, they will go through what is called the entrepreneurial crisis. The entrepreneurial crisis means that they have to make a transition to a professional management style from the original informal management style. Transitioning to the professional management style is something that the entrepreneurs are resistant to do and therefore may result in business underperformance (Davila et al., 2010). It is also mentioned, that changing from a personal to a more professional management style will affect the entrepreneurial spirit negatively that characterizes business ventures. However, at a certain stage, often when the company has between 50 and 100 employees the management style needs to change. Investors are interested in high growth, and if the entrepreneur fails to become a manager, investors such as venture capital firms often push for change in the CEO position (Davila et al., 2010).
4.5 Industrial Business Ventures Needs

It has been recognized that business ventures often lack capital in the seed and start-up phase due to VC firms moving away from their traditional early stage investments (Harding 2002). Business ventures within technology or industrials often have high education in a specific field but lack the management skills that is required (Rasila, 2004).

4.5.1 Equity Gap

Early-stage ventures often need capital, either from institutional investors or high-risk equity investments but these investors prefer larger, more cost-effective and lower risk investments. This mismatch of capital needs and investor interest results in a lack of funding in early-stage ventures and is therefore called equity gap. (Rasila, 2004). Equity gap is a term that is widely used in scientific articles and literature and describes the lack of capital availability and has been proven in several studies. The first description of equity gap is from the 1930's and was then referred to as the MacMillian Gap (Rasila, 2004).

Venture capital firms traditionally invested in companies that were at the seed- and start-up phase but VC firms in the last years moved towards larger size investments at later stage, creating an equity gap (Harding 2002). This means more early-stage ventures seek high-risk investments compared to the number of investors interested in making these investments. There are several reasons behind VC firms moving towards later investments. Firstly, the amount of invested capital per company has increased, partly due to the high cost of due diligence per company. Also, management needs are approximately the same both in large and small investments, making larger investments more time and capital efficient. Secondly companies that VC firms invest in often lack a proven track record which means that they are perceived as higher risk compared to their potential rate of return (Harding 2002). Therefore, investments such as Management Buy-In (MBI), Management Buy-Out (MBO) and pre-IPO are more interesting since they are later stage investments with lower risk (Harding 2002). Another reason is that some companies are not suited for VC investments as they have businesses needs that do not suit VC investors (Harding 2002).

4.5.2 Competence Gap

The competence gap is the lack of knowledge needed to maintain a business successfully (Rasila, 2004). Founders of new companies within technology are experts in their products’ field but often lack the business and management skills that are needed to maintain their businesses. It has been shown by studies that entrepreneurs are concerned and feel the need of expert advice (Rasila, 2004). The additional expert advice is in some cases considered more important than the provided capital. Many support mechanisms exist to help these new companies such as universities offering entrepreneurship classes, incubators in addition to venture capital firms and other external investors (Rasila, 2004). However, these mechanisms are not perfect, and the added value that they are expected to provide in addition to capital may not be good or enough. This cause may be one of the reasons why a business venture may end up in bankruptcy due to lack of required business skills that investors fail to provide, and entrepreneurs themselves does not have. The lack of knowledge described previously is called the competence gap (Rasila, 2004). The early stage seed money is needed for business ventures but are difficult to receive for the founders and even venture capital firms and business angels sometimes fail to provide the company with adequate amount of capital (Rasila, 2004).
This gap in both competence and capital is problematic and even more so for industrial companies that receive no investor funding with founders that lack the management experience. A startup within high-tech or bio-tech has far greater needs of capital compared to the average startup since it can take several years of development before they have a finished product and after that, they still must enter the market (Rasila, 2004).
5. Theory

In this chapter, relevant theories will be presented that are required to create a base for the further understanding of the subject in question. Theories presented will be Business Success Versus Failure Prediction Model, the Rate of Innovation Diffusion, and Corporate Governance. These theories will together with literature provide the base of Our Framework presented in subchapter 5.4 of this chapter.

5.1 Business Success Versus Failure Prediction Model

The success versus failure prediction model (S/F model) by Lussier (1995) is appropriate for this thesis since it is a nonfinancial model. In small business research, nonfinancial models are better suited than financial models (Dennis and Fernald 2001, Cooper et al. 1990). The model is extensive and the study that the model is based on examines the effectivity of 15 different variables that 20 studies previously have identified (Lussier and Halabi, 2010). All the variables included in the S/F model have been included in at least one study where three or more variables have been identified as contributing factors to a business either failing or being successful (Lussier, 1995). From these criterias, 15 variables have been identified, and after that, a hypothesis has been developed for each variable to explain the independent variables relationship to the dependent variables performance (Lussier, 1995). The 15 variables and their connected hypotheses are stated below.

**Capital:** A Business that start with a suitable amount of capital has a better chance of survival compared to a company starting with a shortage of capital (Lussier, 1995).

**Record keeping and financial control:** A business that uses appropriate financial controls, as well as accurate and updated records, has a better chance of survival compared to firms not using it (Lussier, 1995).

**Industry Experience:** Firms that are managed by people that have prior experience within the industry have a better chance of survival compared to those without prior experience in the industry (Lussier, 1995).

**Management Experience:** A business managed by people with prior experience in management have a better chance of survival compared to those without prior experience in management (Lussier, 1995).

**Planning:** Firms that develop a specific business plan have a better chance of survival compared to those not developing a specific business plan (Lussier, 1995).

**Professional Advisors:** Firms that use professional advisors (VC firms included) have a better chance of survival compared to firms without professional advisors (Lussier, 1995).

**Education:** Businesses that are founded by people with one or more years of education in college have a better chance of survival compared to individuals without a college education (Lussier, 1995).

**Staffing:** If a business can attract and retain quality employees there is a better chance of survival compared to those businesses that cannot attract and retain quality employees (Lussier, 1995).
**Product/Service Timing:** Firms choosing products/services that are in the growth stage has a better chance of survival compared to those with a product that are either too new or too old (Lussier, 1995).

**Economic Timing:** A firm starting during an expansion phase has a better chance of survival compared to one that starts during a recession (Lussier, 1995).

**Age:** Older people starting a business have a better chance of survival compared to younger people starting a business (Lussier, 1995).

**Partners:** A firm started by more than one person has a better chance of survival compared to a firm started by one person (Lussier, 1995).

**Parents:** Business owners with parents that owning business has a better chance of survival compared to those business owners that have parents that do not own a business (Lussier, 1995).

**Minority:** Businesses owned by people that are minorities have a lower chance of survival compared to those owned by no minorities (Lussier, 1995).

**Marketing:** Owners with marketing skills have a better chance of survival compared to owners without marketing skills (Lussier, 1995).

This full model, using all 15 variables has been used on 234 businesses in Chile and successfully predicted business success or fail ratio in 63 percent of the cases (Lussier and Halabi, 2010). In the initial U.S. study, 216 businesses were studied, and the model successfully predicted business success or fail ratio in 69 percent of the cases (Lussier, 1995). In a Croatian study, 120 different businesses cases were analyzed, and model successfully predicted the business success or fail ratio in 72 percent of the cases (Lussier and Pfeifer, 2001; Lussier and Halabi, 2010). In an Israeli study with a sample of 205 small business the model successfully predicted business success or fail ratio in 85 percent of the cases (Lussier and Marom, 2014). If one has a group of businesses in Chile and the U.S, the model will in more than 99 percent of cases predicts failed or successful firms more accurately compared to a random guessing (Lussier and Halabi, 2010). Lussier model will be used as a base for our theoretical framework in the upcoming chapter.

In the previously mentioned studies, the model has been tested by sending questionnaires to CEOs to rank the factors on a seven-digit scale or by years depending on the factor (Lussier and Halabi, 2010). The model requires the use of judgment to assign an appropriate scale for each factor and then to evaluate each business venture on that scale. One example for a possible digit scale can be to assign the numbers between 1-3 as poor performance, 4 as mediocre performance 5-7 as good or excellent performance (Lussier and Halabi, 2010). For each variable, a value is assigned, and these values will then provide an overall probability for success for each business venture case.

In this thesis, all variables besides Parents, Partners, Age, Staffing, Marketing, and Minority will be covered and investigated. This is due to limits in time, data availability and demographical factors. The relevant factors will not be used to value IBVs success or failure rate. The factors have already shown their relevance in previous studies and will in this thesis be used as a base of Our Framework to identify IBV specific needs.
5.2 Rate of Innovation Diffusion

Rogers (2003) has developed a theory called rate of innovation diffusion which includes the rate of innovation adoption. This theory showcases the process that impacts the rate of adoption of a new concept. It is a relevant theory to use in the case of industrial business ventures, to understand their products’ rate of innovation adoption by their customers. The five characteristics of Rate of Innovation Diffusion, defined by Rogers (2003) will be listed below included with a short explanation.

**Relative advantage** – How useful is the technology or idea compared to similar offerings? Relative advantage includes factors like economic cost, payback time, non-economic factors like convenience, prestige and secondary attributes, for example, the products context specificity (Rogers, 2003).

**Compatibility** – How well is it that a specific technology or idea fits into the existing product offerings and business strategy (Rogers, 2003). Compatibility is a concept that shows how well an innovation fits with existing values, skills and norms. The better the idea fits with existing values, skills, norms and the level of knowledge of the adaptor, the higher the compatibility it has with the adaptor. (Rogers, 2003). An idea that demands investments in new equipment to make it work has lower compatibility compared to an idea that does not need new equipment to make it work.

**Complexity** – How difficult it is to understand or use a technology or idea? Complexity is the concept that shows what level an idea is on the simplicity to difficulty scale when it comes to the understanding of its use (Rogers, 2003). A product that has low complexity is easier to adoption for customers with a shorter learning time.

**Trialability** – How easy is to test the technology or idea? The ability for a demonstration of an innovation reduces the risk with adaption (Rogers, 2003). Trialability is a concept that shows how easy or difficult it is to test the idea and to experiment upon (Rogers, 2003). Potential customers sometimes want to test the product before making a decision, and easy trialability is, therefore, beneficial product trait.

**Observability** – How useable is the technology or idea and are its benefits visible to others? Observability is the concept that shows how easy it is to understand a product, process, or offering by its potential customers (Rogers, 2003).

5.3 Corporate governance

Corporate governance is based on a set of rules, practices, and processes that create a system that is used as a base to control a company. The goal of corporate governance is to create a balance between a company’s many different types of stakeholders. The stakeholders can be owners, managers, customers, financiers (VC, PE) community and the government. It can also include the context in which the company operates in, regarding legal, regulatory, and institutional environment while it also can include ethics and other social interests. Corporate governance includes every type of management processes, internal controls, performance measurement and action plans. In a company, the board members are key stakeholders and have the biggest effect on how corporate governance systems should be used (Kleinschmidt, 2007; OECD, 2015).
There are a high number of corporate governance practices existing in the world, therefore, depending on the country, and the region may be defined a little differently. (Kleinschmidt, 2007). The four main parts are presented below:

**Shareholder rights:** protect ownership, enable sufficient access and flow of information enable, and protect voting rights.

**Management:** Choosing capable managers, setting goals together to increase collaboration between managers, evaluation of management.

**Board:** Setting up the board with people from right background, exercising board decisions for the whole organization.

**Reporting and Auditing:** accurate qualitative and exact reporting, independent auditing.

Corporate governance should include three concepts to achieve performance measurement and improvements. Firstly, monitoring includes annual reporting and performance control. Secondly, bonding includes the use of agreements and incentives to align board and shareholder goals. Thirdly advice, including a knowledgeable and experienced board to add better advice (Huse, 2005; Kleinschmidt, 2007; OECD, 2015).

### 5.4 Our Framework

This theoretical framework is based on previous studies and theories with the purpose to identify the most important needs in an industrial business venture, shown in Figure 8. Our Framework is based on theories by Lussier S/F model, Roger’s Rate of Innovation Diffusion, Corporate Governance and the literature review. This theoretical framework will be tested and refined throughout the thesis.

#### 5.4.1 Theoretical Background for Our Framework

The theoretical background will be used as a base for Our Framework. Industrial business venture theories and literature includes Lussier’s S/F model, Corporate Governance, Equity Gap, Roger’s Rate of Innovation Diffusion and Competence Gap and is shown in Figure 8. Our Framework is presented in the upcoming section and will include key parts of the mentioned theories and literature.

**Figure 8. Literature and theories that will be used as a base for Our IBV Needs Framework.**

#### 5.4.2 Factors Included in Our Framework

In this section, the different factors included in Our Framework will be presented together with an explanation why they were chosen, based on previous research and literature. Figure 9 shows the subcategories of IBV Needs, and the different needs included in these subcategories will be presented and explained. Subcategories include Capital, Competence, Education & Experience and Corporate Governance, Product and Professional Advisory. Our model is mainly based on
Lussier’s (1995) findings in the S/F model, but our model captures IBVs needs, not the success versus failure factors of an IBV. Other factors from literature and theory have been added and will be further explained.

Figure 9. Subcategories of needs in Our Framework, specified for industrial business ventures.

**Capital**

Capital is the first category of needs in Our Framework. It includes two sub needs, which are Funding and Economic Timing.

*Funding* - Early-stage ventures often are in need of funding, either from institutional investors or high-risk equity investors but these investors prefer lower risk investments that require less management and control time and therefore, are more cost-effective investments. This environment with low capital availability for early-stage ventures is, therefore, called for equity gap. (Rasila, 2004) The early stage investment capital and seed money is needed for business ventures but are difficult to receive for the founders (Rasila, 2004). Starting a business venture with a suitable amount of capital gives according to Lussier (1995) the business venture a larger chance of success compared to if one have a shortage of capital.

*Economic Timing* - A firm started during an economic growth period has a higher chance of success compared to one that starts in a recession (Lussier, 1995).

**Competence**

Founders in technology business ventures are usually experts in one specific field but often lack the business and management skills that are needed. The lack of management knowledge is called the competence gap according to Rasila (2004). Competence needs have been divided into two subcategories of needs: Education & Experience and Corporate Governance. Education & Experience is then divided into three sub needs: Technical Education, Industry Experience and management. Corporate Governance divided into three sub needs: Record Keeping & Financial Control, Planning and Product/Service Timing.

**Education & Experience**

Education & Experience has been divided into three different sub needs: technical education, industry experience and management.

*Technical Education* - It is mentioned by (Rasila, 2004) that new company’s founders within technology are experts in their field but often lack the business and management skills that are needed. College education is also a success factor in the S/F model by (Lussier, 1995) as
companies that are founded by people with one or more years of education in college have a smaller chance of failure.

*Industry Experience* - Business lead by people with prior management experience have a higher chance of success compared a business that has no prior experience in management (Lussier, 1995).

*Management* - Businesses lead by people with prior management experience have a higher chance of success compared to those business that have no prior experience in management (Lussier, 1995). In our model, management will not just include an investigation of management experience, but also education in management.

**Corporate Governance:**
With the help of Corporate Governance, the goal is to measure performance and achieve improvements (Huse, 2005; Kleinschmidt, 2007; OECD, 2015). Corporate Governance includes three sub needs: Record Keeping & Financial Control, Planning and Product/Service Timing.

*Record Keeping & Financial Control* - Businesses with appropriate financial control processes as well as accurate and updated records have increased chance to succeed compared to those that do not have these control systems (Lussier, 1995).

*Planning* - Firms with a well-developed and a specific business plan have increased chance to succeed compared to those not developing a specific business plan (Lussier, 1995).

**Product Diffusion**
Based on previous studies made by Rasila (2004) it is mentioned that business ventures within technology are experts in their field. Industry companies are based on a product or process, and it is therefore of interest to understand what characteristics the product or process needed to succeed. The Rate of Innovation Diffusion model by Rogers (2003) is therefore integrated into the framework where different characteristics will be analyzed with the help of questions that have been developed, seen below in Table 1. It will include relative advantage, compatibility, complexity, trialability, and observability.

*Table 1. These are the questions that will be used to characterize the rate of innovation diffusion factors of a product.*

<table>
<thead>
<tr>
<th>Rate of innovation diffusion defined as a question</th>
</tr>
</thead>
<tbody>
<tr>
<td>Relative Advantage: How good is the product compared to existing ones?</td>
</tr>
<tr>
<td>Complexity: How easy it is to start using the product?</td>
</tr>
<tr>
<td>Observability: How easy is to see and to understand the product advantages?</td>
</tr>
<tr>
<td>Compatibility: How easy is it to switch to the product?</td>
</tr>
<tr>
<td>Trialability: How easy is it to test the product?</td>
</tr>
</tbody>
</table>

*Patent* - Patent is considered as a need in this framework since it is mentioned by Rasila (2004) that founders in IBVs often are experts in their field and lack the management experience. Patents will also be related to Roger’s rate of innovation diffusion.
Product/Service Timing - Business Ventures choosing products or services that are in a market that is growing have a bigger chance to succeed compared to those with a product that are either too new or too old (Lussier, 1995). Having the right product or service timing is important in this framework since industrial business ventures are focused on products, and Rasila (2004) mentioned that they often are experts in one specific field.

Professional Advisory
Business ventures that received professional advisory help such as VC firms have a bigger chance to succeed compared to firms without professional advisors according to Lussier (1995). Therefore, it is also considered a need in this framework. Studies by Dimov and De Clercq (2006), Bottazzi et al. (2008) shown that venture capital expertise add value to new venture while Brown and Osteryoung (2004), and Florin (2005) based on pre-IPO and after IPO performance shown that VC firms do not add value. Studies have shown that entrepreneurs are concerned and feel the need of expert advice (Rasila, 2004) that is in some cases as more important than the provided capital. A Swedish survey has shown that entrepreneurs valued access to capital, VC firm competencies, and moral support as the most important value-added activities (Fredriksen et al., 1990).

Requirements:
In Sweden, the industrial sector is the least popular sector for VC firms to invest in shown by Kroksgård (2016). Therefore, to get funding and value-added activities, industrial business ventures needs to fulfill the requirements of active investors (Lussier, 1995). The most important investor requirements will be included in Our IBV Needs Framework that needs to be fulfilled to receive active investor funding, and value-added activities.

5.4.3 IBV Needs Framework
IBV needs have been collected to create the IBV Needs Framework seen below in Figure 10 and will be used to analyze the interview results, with the help of the literature study and relevant theories. The framework based on the new findings from the interviews and theory will be refined to explain IBV needs in the Analysis chapter. The IBV Needs Framework presented in Figure 10 includes all the sub needs presented in the previous section 5.4.2.
Figure 10. IBV Needs Framework includes the most important needs of IBVs.
6. Interview and questionnaire design

The following chapter presents the general interview questions that will be used for both the “Company interview template” that will be used to interview company representatives and the “Investor interview template” that will be used to interview investment managers. The questions are formulated based on Our Framework presented in subchapter 5.4 as well as the current investment climate presented in chapter 3, the literature presented in chapter 4, and the theories presented in Chapter 5. The interviews will be semi-structured and questions will have an open character to provide the flexibility needed to explore new ideas while also have the structure for analysis and closer inspection for comparison between the interviews. These questions will function as guideline and follow up questions will be used when appropriate to get a deeper understanding of each topic the questions explore. The follow-up questions may depend on the company’s characteristics and the interviewee position in the company. After each question, a short explanation will be presented about the relevance of the question and how it is connected to the research subject, literature and theories.

6.1 Background questions

Background questions are used both in the “Company interview template” and “Investor interview template” to gain more knowledge about the interviewed person as well as the company or the investor. The following questions were used:

Do you and the company that you represent want to be anonymous?

What is your position and background in the company?

How did you end up in this company and how did your journey look like until today?

How many employees are there in the company?

How old is the company?

6.2 Company interview template

Following questions are specific questions that were asked to business ventures which sometimes had follow-up questions depending on the depth of the answer.

What is the turnover of the company?

The aim of this question is to get an understanding for the revenue size of the interviewed business venture. The answer to this question will also be confirmed by the use of online sources to ensure reliability.

What kind of education do the founders have in the industrial companies?

The question will be used for both the business ventures as well as for investors to get a better understanding of how often they are specialized in a specific area and in what areas they may have a lack of competence. This question can also be linked to the S/F model by Lussier (1995) since three of the success factors are the need for higher education, partners, and marketing
knowledge. This question can further be linked to what is said by Rasila (2004) that founders within industrials often are experts in their field but lack the management that is needed.

**Did the founders have any previous education or experience in finance and management?**

This question will help to understand if there is a competence gap and help to investigate further if founders are specialized in a specific field as mentioned by Rasila (2004). Furthermore, four of the success factors in the S/F model by Lussier (1995) are record keeping and financial control, industry experience, management experience and planning which this question partly will help to answer and give better insights.

**How would you describe the level of difficulty finding capital?**

To better understand if there is an equity gap or not that is affecting business ventures in Sweden this question is going to be used. Since Kroksgård (2016) shows that there are few early-stage investments by venture capital firms in Sweden and the industrial sector is the one with the least amount of investments, this question will be asked to investigate the business ventures point of view further. Moreover, capital is a success factor in the S/F model by Lussier (1995) which is another factor emphasizing the relevance of the question.

**Why did you choose that investor?**

The aim is to understand how companies are choosing their investors and what they look for in an investor. Is it the shortage in capital that leads to the lack of early-stage investments by venture capital firms in Sweden? Are there any other underlying reasons for the lack of investments in the industrial sector, for example, that companies do not want active investor involvement? Do companies have processes and models to find the fitting investors for their business? This question was also meant to be used as a follow-up question for the previous one to get a more extensive understanding of the level of difficulty to get capital. This question is also connected to the equity gap mentioned by Rasila (2004).

**How would you describe the level of difficulty of explaining your product to potential customers?**

This question helps to answers the rate of innovation diffusion since a new product's usefulness might require a longer time of explaining (Rogers, 2003). The aim with this question is also to get a deeper understanding for how business venture might try to sell their products. It is also a relevant question to use for the S/F model by Lussier (1995) since product/service timing is one of the success factors.

**Do you have any patents in the company?**

This question helps to investigate further how specialized founders and the business ventures are in a specific field and partly help to implement the rate of innovation diffusion theory (Rogers, 2003). Moreover, it can be linked to product/service timing in the S/F model by Lussier (1995) since too new or old products have a higher chance of failure compared to product/services in the growth stage according to the model.
Do you have your own in house production?

Again, a question formed to understand the capital needs of the company both to investigate the equity gap but also to look at capital as a success factor in the S/F model by Lussier (1995). Furthermore, it provides an understanding of different competencies and experience needed in the company, also included in the S/F model by Lussier (1995) and how these needs changes depending on if they have in-house production or not. It is of interest to understand how companies handle the lack of investments if they have in-house production or if they have found other ways to operate their businesses.

Are you as a business venture satisfied with the added value activities received from active investors?

This question will be brought up to understand better what initial competence and capital the business venture had and what added value active investors usually provided them with. The aim with this question is also to understand how business ventures view active investors, and what their thoughts are about their value-added activities. Are there any knowledge that even active investors failed to provide? This question is also relevant to the S/F model by Lussier (1995), where it is stated that companies that have professional advisors have a higher chance of success compare to companies who do not.

How long decision-making \(^2\) time does your customers generally have?

This question further helps to investigate the rate of innovation diffusion by Rogers (2003) of the product/services provided by the business ventures and how long it takes for the business ventures to generate income from their product/services. Furthermore, it will partly answer the capital, product/service timing and economic timing success factors in the S/F model by Lussier (1995).

6.3 Investor interview template

Following questions are specific questions that were asked to investors which sometimes had follow-up questions depending on the depth of the answer.

What is the difference between VC, CVC and PE investors?

VC firms used to be early seed investors, and PE firms used to be investors focused on later stage investments in the mature stage, but according to Rasila (2004) and Kroksgård (2016), there has been a shift in investor behavior as VC firms invest in a later stage, moving towards PE investments. Therefore, it is important to ask investors about their view to confirm Rasila (2004) and Kroksgård (2016) findings. This question will also provide knowledge about the different type of investor strategies there are on the market and how they view themselves and each other. With this question, current trends in investor behavior will be investigated, which can be related to the current investor climate in Sweden, Chapter 3.

\(^2\) Customer decision making time – refers to the time the customers require for deciding to buy a product or not. Customers may require a lot of time for testing and validation of the product before deciding to acquire it. Therefore, asking about is relevant from a rate of innovation adaption perspective.
What does the market look like for the type of investments you do?

Again, the aim with these questions is to understand and confirm the current trends on the Swedish market and to provide a deeper understanding of it. The question may open for follow-up questions on why some sectors are not interesting to investors, including the industry sector.

In which stage of the development process of a company do you choose to invest in? Why do you choose to invest in that company development phase?

This question will be asked to get a better idea on what kind of investments the interviewed investors are focused on and why that certain phase is interesting for them. Moreover, it will give a better insight about the proposed Equity gap mentioned by Rasila (2004). Follow-up questions will also provide insight of the amount of capital that is needed in that specific stage.

What time frame do you as an active investor have on your investments and how is that affected by the type of investors you have in your fund?

Active investor’s source of capital (e.g. private, pension fund, state-funded) may influence their investment timeframe. Therefore, depending on the fund's investment time horizon, some sectors may be more preferred than others to invest in. This question is therefore of a keen interest since some sectors may be more suitable for business ventures with a capital source (e.g. private, pension fund, state-funded) and the low level of investor funding in industrials may be better understood (Kroksgård, 2016).

How important is the relationship between the Investment Manager and Founder/CEO of a company?

Fried and Hisrich (1995) research is going to be investigated by using this question as they have described VC firms as "relationship investor" as there is a need for good relationship between the VC investor and the CEO for value creation.

What kind of skills should the founders/business venture management have to get funded by investors?

Since professional advisors is a factor in the S/F model by Lussier (1995) and active investors are a type of professional advisors it is important to understand what is expected by business ventures to get funding from active investors.

How would you describe the needs of industrials compared to other sectors?

The question will be relevant as it can help to provide an insight why there is low investor funding in the industry sector (Kroksgård, 2016). It will also provide an insight whatever there are any differences between the different sectors investors are investing in. A question that may provide insight into whether there is a difference in capital needs, competence needs or corporate governance needs between industrial and other sectors.
What type of valued added activities does you as an active investor add to your investment company?

The goal with this question is to investigate what values investors add and to confirm and understand the relevance of Spaineza’s (1994) definition of value-added activities. This question is also relevant for the S/F model by Lussier (1995) as it helps to partly understand a company's level of knowledge in areas of industry experience, management experience, and planning. If there is a need for corporate governance practices, it can also be further investigated. Literature from Sapienza et al., (1996) Kaplan, Strömberg, (2004) and Kleinschmidt, (2007) shows that investors use corporate governances to practices handling agency risk which can also be confirmed by this question. A follow-up question may further investigate Davila et al. (2010) research about the need of transformation of management to professional style and its effects on founders.

What do you believe as an active investor is the most difficult thing to get right in a business venture and do you see any recurring trends in several investments?

The question has a very open nature that is meant to both open for new insights and findings. From the investor perspective, this will also provide further knowledge on what they think business ventures need and what they tend to lack. Furthermore, it can be of help, to identify if some success factors in the S/F model by Lussier (1995) are missing, for examples management experience or planning.
7. Interviewed Investors and Companies

In this chapter, the interviewed business ventures and active investment firms will be listed. First key facts about each of the interviewed business ventures and investor firms will be presented, followed by a short introduction about interviewees’ backgrounds.

7.1 Interviewed Industrial Business Ventures

In this subchapter, a brief presentation will be provided about the interviewed industrial business venture cases.

7.1.1 Company A

This company has asked to be anonymous and therefore throughout this report it will be referred as “Company A.”

Interviewee position: CEO
Interviewee name: “Board Member A”
Founders’ education: M.Sc. in Civil Mechanical Engineering and Ph.D. (in the startups product)
Number of employees: 5 (project based)
Revenues: 6 million SEK
Birth year of the company: 2007 (idea building since 2004)

Board Member A has an academic background with a M.Sc. in Civil Mechanical Engineering and a Ph.D. The Ph.D. education has provided the founder with knowledge that was required to be able to develop the product idea.

Short introduction: Company A produces waterjet cutting machines. All production is done through outsourcing to several suppliers to keep costs as low as possible. Currently, there are five employees in the company, and the company is driven on a project basis as the demand is unpredictable. Potential buyers usually spend 6 - 18 months on making any decision whatever to buy the product or not.

7.1.2 Company B

This company has asked to be anonymous and therefore throughout this report it will be referred as “Company B.”

Interviewee position: Chairman of the Board
Interviewee name: “Board Member B”
Founder education: Not known
Number of employees: 400
Revenues: 1.6 billion SEK
Company age: 30 years

Board Member B has more than 30 years of experience being in charge and working in different levels of managerial and leadership positions and has an extensive industry knowledge within the business the company is in. Board Member B also has a background working as an advisor for a private equity firm before joining Company B, as their representative in different
companies’ as chairman of the board. Board Member B has, therefore, the insights to provide extensive knowledge from both the company and from the investor perspective.

Short introduction: Company B is involved in EPS plastics production which is used for a wide variety of applications from house isolation to a wide range of other products. It took around two years to reach a saleable product from initiated development of their first product. The company controls the whole value chain from production to servitization which gives a significant advantage as it enables them to stay ahead of the competition by allowing product service differentiation.

7.1.3 Company C
This company has asked to be anonymous and therefore throughout this report it will be referred as “Company C.”

**Interviewee position:** Board Member  
**Interviewee name:** “Board Member C”  
**Founders’ education:** M.Sc. in engineering and MSc in economics  
**Number of employees:** 75  
**Revenues:** 275 million SEK  
**Birth year of the company:** 2005

Board Member C has previous experience in a CVC firm and has made about 100 investments in between 20 and 25 companies. The investments have been focused on companies in tech, including companies within industrials that in one or another way have been of interest to the CVC firm that Board Member C previously worked for. Today Board Member C is working as a CFO in Company C’s holding company as well as being a board member for Company C. Board Member C has been an investor and board member at Company C for more than eight years.

Short Introduction: Company C develops, manufactures, and markets tilt rotators, quick couplers and different tools that are used for excavators. There are two other Swedish companies with a similar product on the market with just minimal price difference.

7.1.4 Company D
This company has asked to be anonymous and therefore throughout this report it will be referred as “Company D.”

**Interviewee position:** CEO (not founder)  
**Interviewee name:** “Board Member D”  
**Founders’ education:** Ph. D. + Dr. h.c and M.Sc. as well as 3 more researchers.  
**Number of employees:** 20  
**Revenues:** 215 000 SEK (  
**Birth year of the company:** 2003 (Result of over 20 years of research)

Board Member D was headhunted for his position and have worked for company D since 2009. Previously Board Member D has worked as a CEO and has more than 20 years of experience with management positions within large international corporations. He also has previous experience in commercializing new ideas.
Short Introduction: Company D is a leader in the production of dynamic glass with controllable optical properties that are more energy efficient than competitor offerings and improves the indoor comfort. With over 30 years of research behind the product technology, including over ten years as a company, the first sales and deliveries took place in 2016. Both patents and in-house know-hows are used as protection against competition.

7.1.5 Company E
This company has asked to be anonymous and therefore though this report it will be referred as “Company E.”

**Interviewee position:** CEO  
**Interviewee name:** “Board Member E”  
**Founders’ education:** Ph.D. (Docent) and Ph.D.  
**Number of employees:** 1 (was 6 at one time)  
**Revenues:** 5 million SEK (2016), 0.2 million (2015)  
**Birth year of the company:** 2007 (idea building since 2004)

Board Member E founded Company E together with a Ph.D. student and took a patent on a manufacturing process.

Short Introduction: Company E has not received any capital from active investors, just 0.5 million SEK from a friend and a 1 million SEK loan from Almi. The founders had technical knowledge but no management and sales knowledge and started a sales company that had six employees at one time. Everything died during the financial crisis 2008, but everything was positive before 2008, with many potential customers from Belgium, China, Japan, Germany, Finland and other countries. The amount of capital that was necessary to start their foundry for research and development would require investments that would leave the founders with barely any ownership in their company. Instead, the decision to start building up production in China was made, with 200 employees, making it the world’s biggest of its kind. Board Member E and business partner were shareholders owning 50 percent together of the production business in China until they sold their share last year. The production in China has bought the right to use the technique while Board Member E (2017) is managing his own business based on the same patent in Sweden and owns the patent rights.

7.1.6 Company F
This company has asked to be anonymous and therefore though this report it will be referred as “Company F.”

**Type of Industrial:** Product company (selling the product as license to use the patent)  
**Interviewee position:** CEO (not founder)  
**Interviewee name:** “Board Member F”  
**Founders’ education:** Prof., 3 Ph.D., M.Sc.  
**Number of employees:** 16  
**Revenues:** 9 million SEK  
**Birth year of the company:** 2008

Board Member F has been the CEO for Company F for the last three years and has worked in different management positions such as CEO, product manager and production manager for more than two decades. The different companies Board Member F worked for have always been within the industrial sector with both small and large businesses.
Short Introduction: Company F was founded in 2008, and the product was a result of a doctoral dissertation. In addition to the initial product the company now has three different product families based on six different patents. Initially, the business venture was technology oriented but have now moved towards being more management oriented. Company F just started to sell licenses for the use of their patents, and so they get paid for the number of products produced, but money is coming in slowly.

7.2 Interviewed Active Investors
In this subchapter, a short presentation will be provided about the interviewed investor cases.

7.2.1 Investor A
This company has asked to be anonymous and therefore though this report it will be referred as “Investor A.”

Type of active investor: Corporate venture capital (CVC)
Interviewee position: Investment manager
Interviewee name: “Investment Manager A”
Investment strategy: Technology and life-science investor
Invests in: Technology (both hardware and software), consumer IT, fintech and life-science
Investing phase: At a working proof of concept, sometimes later

Short Introduction: This company is the corporate venture capital arm of a well-known financial firm. They are technology investors so they invest in upcoming innovative technology startups that are acquired based on their innovativeness. Bigger companies who need that ground-breaking technology to develop their product portfolio offerings may later acquire these type of innovative business ventures. They invest both financially to gain monetary advantages and strategically to build in-house knowledge by accessing innovations. When they invest with a financial objective, they represent the startup if the mother arm of the VC firm wants to acquire the startup. By using ethical barriers (Chinese wall) to shield the flow of information between the mother company and the VC-arm of the firm, conflict of interest is avoided. They have an evergreen structure, therefore, they are patient investors with a long investment horizon if needed.

7.2.2 Investor B
This company has asked to be anonymous and therefore though this report it will be referred as “Investor B.”

Type of active investor: Venture capital (VC)
Interviewee position: Investment manager
Interviewee name: “Investment Manager B”
Investment strategy: Growth investor
Invests in: Technology with a lot of energy investment, hardware, mostly B2B companies
Investing phase: Seed investor

Short Introduction: This investment company has a CEO and co-workers with a technical/engineering background, so they have specialized in hardware products with B2B customers. They have in the last couple of years moved towards energy and energy production investments. Investor B's usually invests as minority shareholders as they have moved towards
later stage investments and therefore have smaller amounts of capital to invest. According to Investment Manager B, it takes more time to help smaller companies than bigger ones, the reason why they started to invest in bigger companies.

7.2.3 Investor C
This company has asked to be anonymous and therefore though this report it will be referred as “Investor C.”

**Type of active investor:** University/state-funded venture capital with an incubator and accelerator arm  
**Interviewee position:** Investment manager  
**Interviewee name:** “Investment Manager C”  
**Investment strategy:** Seed investor, early stage investor  
**Invests in:** IT, Cleantech and life-science most commonly, but companies in every sector  
**Investing phase:** Early phase, normally in companies that are 1-3 years old.

Short Introduction: This investor has an incubator, accelerator, and a VC arm. Therefore, many of the companies that the VC arm invests in comes from the incubator or accelerator arm of the organization. They typically invest a couple of millions SEK in their investment companies. Their strategy is to invest in early phase business ventures in the seed stage before they reach their expansion stage and thereby maximize the value creation. They use lean business plans and other cost-efficient strategies to be able to scale ventures with as little capital as possible.

7.2.4 Investor D
This company has asked to be anonymous and therefore though this report it will be referred as “Investor D.”

**Type of active investor:** Private equity (PE)  
**Interviewee position:** Investment professional  
**Interviewee name:** “Investment Manager D”  
**Investment strategy:** Growth investor  
**Invests in:** Consumer internet, software, energy and industrial sectors  
**Investing phase:** Growth/expansion stage

Short Introduction: Investor D is a private equity investor with a fund structure, used to invest in companies that have a potential for high growth or expansion, and active in the consumer internet, software, energy or industrial segment. Traditionally PE firms have invested in companies that are in their mature phase. Company D believe growth-stage investments offer a more attractive risk-return in relation to VC-stage investments. Therefore, by investing before the growth phase Company D can increase the value creation in their investments.

7.2.5 Investor E
This company has asked to be anonymous and therefore though this report it will be referred as “Investor E.”

**Type of active investor:** State-funded venture capital  
1. **Interviewee position:** Fund director  
2. **Interviewee name:** “Investment Manager E”

2. **Interviewee position:** Investment manager  
2. **Interviewee name:** “Investment Manager F”
**Investment strategy:** Seed investor  
**Invests in:** ICT, cleantech, life-science  
**Investing phase:** Early phase, normally in companies that are 1-3 years old.

Short Introduction: Since the VC firm is state-funded there are certain rules that needs to be followed. Maximum investment is 10 million SEK per company and company E can only invest as much money as other private investors have invested in the same company. So, if private investors have invested 5 million SEK in a specific company Investor E are only allowed to invest 5 million SEK. Investor E is an active investor but usually has a minority post between 5-15 percent ownership. Usually invest when a business venture has a prototype and initial customers.

Investment Manager E gave a more general view on the questions while Investment Manager F gave a more in-depth view on what different criteria is they look for as investor to decide if they want to invest in a certain business venture or not.

### 7.2.6 Investor G

This company has asked to be anonymous and therefore though this report it will be referred as “Investor G.”

**Type of active investor:** Private equity (PE)  
**Interviewee position:** Portfolio director  
**Interviewee name:** “Investment Manager G“  
**Investment strategy:** Growth/expansion strategy with focus in internationalizing to access high growth markets  
**Invests in:** All kind of companies: consumer internet, software, energy and industrial sector, clean-teach, IT, fashion and clothing, infrastructure, consumer electronics  
**Investing phase:** Maturity

Short Introduction: Investor G is a PE firms that invests in companies with a yearly revenue of around 700 million Euros and has several funds with several billion Euros under management. Investor G is one of the premier PE firms in the Nordics and has presence and investment all around the world. Therefore, Investor G invests in all kind of companies that are in their mature phase except in gambling and weapon manufacturers. Investor G prefer to invest in businesses with a well-diversified product portfolios, preferably to create growth by for example repositioning the company on the market, or by entering new markets through internationalizing. As Investor G invests in a wide variety of sectors, they bring in market experts, consultants that can give advice and have an extensive sector experience as sector knowledge is very important. They also use local team in each market, with extensive country knowledge to be able to manage the different market conditions and cultural values effectively. Investor G is also currently on its way to start up its own VC fund to invest in business ventures that are in their seed and start-up phase.
8. Results and Analysis

In this chapter, the most relevant results will be presented and analyzed from the semi-structured company and investor interviews. The first subchapter will begin with presenting key information about interviewed companies and active investors. Thereafter the chapter will follow the structure of Our IBV Needs Framework with the following subchapters: Capital, Competence, Product and Professional Advisory. The full structure of the framework can be seen in figure 10. Lastly, a summary subchapter with Our Revised IBV Needs Framework will be presented based on the interview results, theories, and literature.

8.1 Interviewed Companies and Active Investors

Since some of the respondents have been active both as investment managers and as company board members, they were able to answer the interview template questions with both perspectives in mind.

Company representatives will be referred as “Board Member” with a letter of the alphabet that corresponds to a company with the same letter as already shown in the previous company introduction chapter. The same logics will be followed for investor representatives whom will be referred to as “Investment Manager” with a letter of the alphabet that corresponds with the investors companies’ letter from the previous chapter. Table 2 shows the industrial business ventures and investor firms with the corresponding name to the interviewees.

Table 2. The table shows the interviewed IBVs and Investors with corresponding respondents.

<table>
<thead>
<tr>
<th>Interviewed IBVs</th>
<th>Interviewed Investors</th>
</tr>
</thead>
<tbody>
<tr>
<td>Name of IBV</td>
<td>Name of respondents</td>
</tr>
<tr>
<td>Company A</td>
<td>Board Member A</td>
</tr>
<tr>
<td>Company B</td>
<td>Board Member B</td>
</tr>
<tr>
<td>Company C</td>
<td>Board Member C</td>
</tr>
<tr>
<td>Company D</td>
<td>Board Member D</td>
</tr>
<tr>
<td>Company E</td>
<td>Board Member E</td>
</tr>
<tr>
<td></td>
<td>Board Member F</td>
</tr>
<tr>
<td>Company G</td>
<td>Board Member G</td>
</tr>
</tbody>
</table>

The result was conducted by interviewing six industrial business ventures and basic information about product offering, number of employees and revenues of the business venture is provided in Table 3 as seen below.
Table 3. Shows key information about the interviewed companies.

<table>
<thead>
<tr>
<th>Company</th>
<th>Company A</th>
<th>Company B</th>
<th>Company C</th>
<th>Company D</th>
<th>Company E</th>
<th>Company F</th>
</tr>
</thead>
<tbody>
<tr>
<td>Product Offering</td>
<td>Waterjet cutting</td>
<td>EPS plastics production</td>
<td>Tilt rotators, quick couplers, for excavator</td>
<td>Dynamic glass production</td>
<td>Production process solution in Sweden,</td>
<td>Metal coating, technology</td>
</tr>
<tr>
<td>Employees</td>
<td>5</td>
<td>400</td>
<td>43</td>
<td>20</td>
<td>1</td>
<td>16</td>
</tr>
<tr>
<td>Revenues:</td>
<td>6 MSEK</td>
<td>1.6 BSEK</td>
<td>275 MSEK</td>
<td>0.2 MSEK</td>
<td>5 MSEK</td>
<td>9 MSEK</td>
</tr>
</tbody>
</table>

In combination to the interviewed business ventures, active investors were interviewed to provide a more general view on business ventures. This was also done to get a better understanding on what active investors demand to invest in a business venture and what value-added activities they provide to the business ventures. All investors and basic information in the form of type of investor, investment period, investing strategy and investment phase is provided in Table 4.

Table 4. Shows key information about the interviewed active investors.

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Type of Investor</td>
<td>CVC</td>
<td>VC</td>
<td>VC</td>
<td>PE</td>
<td>State-funded VC</td>
<td>PE</td>
</tr>
<tr>
<td>Investment time frame</td>
<td>No limit Evergreen structure</td>
<td>No limit</td>
<td>No limit</td>
<td>4 - 5 Y</td>
<td>No limit</td>
<td>10 + 2 Y</td>
</tr>
<tr>
<td>Investing Strategy</td>
<td>Tech investor</td>
<td>Growth</td>
<td>Growth</td>
<td>Growth</td>
<td>Growth</td>
<td>Growth</td>
</tr>
<tr>
<td>Investment phase</td>
<td>Proof of concept</td>
<td>Proof of concept</td>
<td>Seed, incubator, accelerator</td>
<td>Prior growth phase</td>
<td>Seed phase</td>
<td>Maturity</td>
</tr>
</tbody>
</table>

8.2 Capital

In this subchapter two different sub needs will be analyzed: Funding and Economic Timing. It is difficult for business ventures to find capital especially in the early stage of a business venture. Six interviewees argued that it was difficult to find capital while one interviewee argued that, there is enough capital available on the market. Both factors, market timing and the choice of launch country, affect the capital availability.
A summary of key trends for Capital:

- Difficult to receive funding at an early-stage according to the interviewed IBV companies.
- State-funded research helps to develop product idea or product at universities during doctoral dissertations or later research.
- Production demands large investments, which in three cases have resulted in business plans where companies do not have in-house production.
- The industry sector is cyclical, and therefore with the wrong economic timing, it is difficult to receive funding.

8.2.1 Funding

Board Members A (2017), Board Members B (2017), Board Members C (2017) and Board Members D (2017) argued, as shown in Table 5 that it is difficult to get capital at an early stage, as they have experienced this problem and the equity gap indeed exists for the investigated business ventures. It is mentioned by Board Member D (2017) that it is a full-time job finding capital which was also confirmed by Board Member A (2017).

<table>
<thead>
<tr>
<th>How would you describe level of difficulty to find financing for IBVs</th>
<th>Difficult: 5 IBVs + 2 AI</th>
<th>Easy: 1 AI</th>
<th>Did not respond/vary on case basis: 1 IBVs + 4 AI</th>
</tr>
</thead>
</table>

However, Investment Manager E (2017) believes there is enough capital for business ventures in Sweden and mentioned that Industrifonden has started to invest outside of Sweden due to few suitable cases. Companies that have not received any funding may not be investment ready just yet (Investment Manager E, 2017). Investment Manager E (2017) argued that there is enough investor capital available, but it is the combination of good business ideas and complete business plans that are missing from the market. Investor E is only interested in investing in companies with good management with a strong all-around team with a good business idea (Investment Manager E, 2017). According to the report by Svensson (2017), only 46 percent of available funds in state-funded venture capital firms have been invested in companies, so there is capital available for early stage startups. Investment Manager E (2017) may be correct that for good companies there is enough funding, but for less developed ones, it might not be the case so that they may experience the equity gap (Rasila, 2004).

Rasila (2004) and Harding (2002) mentioned that there is an equity gap, as VC firms moved away from investments in the seed and start-up phase to invest in expansion stage. Furthermore, the amount of investor capital in the seed and start-up phase have decreased in Sweden (Svensson, 2007; Investment Manager D, 2017). Investor B previously worked as a VC firm seed investor and also confirmed that they have moved to invest in a later stage, in the expansion stage (Board Member B, 2017).

Rasila’s (2004) mentioned that high-tech and biotech startups have a greater capital need due to the long and complex product development phase and the needs for setting up own production. However, some of the studied business ventures had products that have been
developed by using state-funded university research (Board Member A, 2017; Board Member E, 2017). For example, Board Member E (2017) mentioned that his patented process was funded by 20-30 million SEK in state-funded research as part of Ph.D. education programs.

Due to the lack of funding or attractive investor offers Company A, Company E and Company F have structured their operations and business models in a way to make it work without large investments. Company A and Company E have solved the lack of capital by having suppliers manufacturing their products (Board Member A, 2017; Board Member E, 2017). Company F has chosen to sell licenses for using their product instead of producing it themselves as a way to manage the need of capital (Board Member F, 2017). These solutions mean that they focus more on their core competencies and lowering the need for capital. Board Member E (2017) mentioned that he tries to find lean solutions and receive help from customers to lower Company E’s need of capital.

**Difficult of finding capital at different stages of IBV development**
Investment Manager E (2017) argued that no matter what development stage a company is in, it is always challenging to find capital. Board Member C (2017) argued that it is more challenging to acquire the first 1 million SEK of investment in an early stage business venture than to acquire the first 100 million SEK in a later stage, as by then, the business venture has a proven business plan. It gets continuously easier the higher growth stage the company is in, to receive funding. Investment Manager A (2017) had the same view on the matter and mentioned that depending on how well developed a business venture is, it will influence how hard investors must market themselves to a potential investment company. The better developed the business venture is, the more they must show, as an investor, how they can help the business venture and market themselves to them (Investment Manager A, 2017).

**8.2.2 Economic Timing**
Board Member A (2017) and Board Member E (2017) described that depending on how the market is, it can be extra difficult to find an investor funding as it was challenging after the crises of 2008 to find investor capital in 2012. Therefore, economic timing is a key factor according to Lussier’s (1995) S/F model as a business started in a booming economy has a lower chance of failure compared if it started when it is a recession.

**Capital availability in different countries**
Company D has at this stage received 470 million SEK of funding, and Board Member D (2017) notes that it is enough money to get the product on the market but that a US competitor has received 6-7 billion SEK in funding, making it a challenge to compete. Board Member E (2017) and his business partner could set up a factory with 200 employees in China as it was a lot easier to get funding compared to Sweden while maintaining 50 percent ownership. Further Board Member E (2017) mentioned that they would have only been left with approximately 10 percent share ownership in the best case if they would have accepted the investor funding and set up production in Sweden.

**8.3 Competence Needs**
Competence needs have been divided into two subcategories: Education & Experience and Corporate Governance. Education & Experience includes three sub needs: Technical Education, Industry Experience and Management. Corporate Governance also consists of three sub needs: Record Keeping & Financial Control, Planning and Product/Service Timing.
8.3.1 Education & Experience

Education & Experience includes three sub needs: Technical Education, Industry Experience and Management.

A summary of key trends in Education & Experience:
- High technical education is needed to start an IBV, and the idea or development of the product is often initiated at universities.
- Management education is lacking among funders but is later hired when the IBVs have reached a certain size.
- Industry experience is also lacking among founders which partly results in too high expectations for the speed of IBV growth with underestimation of costs.

8.3.1.1 Technical Education

One common trend in industrial business ventures is that the founders develop their deep expert knowledge through a doctoral dissertation that later will be used to start the business venture. The high educational level that the founders have in four out of six business ventures shows that to able to start a company in industrials, high level of founder knowledge is needed, preferably a Ph.D. in the field where the business venture is planned to operate in. In Company C, the founders had an MSc in Engineering as the highest technical education, shown in Table 6.

<table>
<thead>
<tr>
<th>What kind of education does the IBV founders have?</th>
<th>Ph.D.</th>
<th>MSc in Engineering</th>
<th>Did not respond</th>
</tr>
</thead>
<tbody>
<tr>
<td>66%</td>
<td>17%</td>
<td>17%</td>
<td></td>
</tr>
</tbody>
</table>

In Company B, the education of the founder is unknown, but the necessary knowledge in Company B was described by Board Member B (2017) as the product development requires tacit knowledge to be learned from time-consuming trial and error test processes. The interviewed individuals that worked in advanced industrials has shown that this sector requires a high level of founder knowledge to be able to start a business venture. Lussier’s (1995) S/F model states that companies that have managers with a college education have a greater chance of success than those companies with managers that does not have a college education. In the case of IBVs, a Ph.D. may even be needed to be able to start a successful business venture, since developing new innovative products requires particular expertise.

8.3.1.2 Management

There was only one IBV that had founders with management education seen in Table 7. The rest of the IBVs, all had founders with non-management education. It is stated by Rasila (2004) that founders of new companies within technology are experts in their company’s technical field but often lack the business and management skills and experience that are needed in a business venture. This lack of management skills is also called the competence gap. It has been shown by studies that entrepreneurs are concerned and feel the need of expert advice (Rasila, 2004). 66 percent of IBVs have hired people with management knowledge. The remaining two IBVs, Company A and Company E, are young companies without any hired management.
knowledge yet, as seen in Table 7. Company A have one employee while Company E has five. Therefore, it is no surprise that they have not hired anyone with management education yet.

**Table 7. Shows the management knowledge in IBVs.**

<table>
<thead>
<tr>
<th></th>
<th>Yes</th>
<th>No</th>
<th>Did not respond</th>
</tr>
</thead>
<tbody>
<tr>
<td>Did the IBV founders have any Management Education?</td>
<td>17 %</td>
<td>66 %</td>
<td>17 %</td>
</tr>
<tr>
<td>Has the IBV hired any Management Knowledge?</td>
<td>66 %</td>
<td>17 %</td>
<td>17 %</td>
</tr>
</tbody>
</table>

Board Member C (2017) and Investment Manager B (2017) argued that it is difficult to find industrial companies with good management experiences. Board Member B (2017) argued that it is hard to find a suitable CEO for an industrial business venture, but it is of importance to keep the founder in the company. However, he mentioned that to keep founders as CEOs, they need to have the right management competence (Board Member B, 2017). In many cases, they lack these competencies, and therefore they are replaced by another CEO, but they should be kept in the business venture in another role that suits their skills (Board Member B, 2017). Investment Manager B (2017) mentioned that he has experience of several cases where CEOs did not understand the need of a professional manager, and he also argued that if you have the right management in a company, you can sell almost anything. Lussier’s (1995) S/F model also states that management experience is needed for an increased chance of a successful business venture.

**Management needs at different stages of IBV development**

When startups reach somewhere between 50 and 100 employees, they must make a transition to a professional management style from the informal management style (Davila & Foster, 2005). Transitioning to the professional management style is something that the entrepreneurs often are against, which may lead to business underperformance (Davila et al., 2010). Investment manager E (2017) also described this transition as critical and that it requires management knowledge in a company. Board Member C (2017) believes that both management and investors should change during different phases of a business venture and that a person can only contribute during a certain phase and later should be replaced. Board Member C (2017) stated that it is necessary to bring in personnel and investors with skills and knowledge that fits with the current business plan and business strategy (Investment Manager G, 2017).

**8.3.1.3 Industry Experience**

Investment Manager B (2017), is one of three investment managers, mentioning that founders might have too high expectations on their company's performance and overestimate their company’s abilities. Founders underestimate both costs and the time that is required for the business to become profitable. (Investment Manager B, 2017; Investment Manager E, 2017). The overestimation of business performance may implicate that the founders both lack industry and business experience as they have a long academic background but no experience as an entrepreneur.
Since founders often come from universities where they have developed their product they may also lack the industry experience, which is a success factor in the S/F model by Lussier (1995). A common trend among active investors is to hire individuals with industry experience based on the portfolio company needs and place them in the company as a board member, to ensure the success of the business venture. Investor B, Investor C, Investor D, Investor G as well as the CVC firm that Board Member C (2017) previously worked for, hire talent externally with sector experience and knowledge for their investments.

8.3.2 Corporate Governance
In this part three different sub needs will be analyzed: Record Keeping & Financial Control, Planning and Product/Service Timing.

A summary of key trends for Corporate Governance:
- Corporate governance knowledge is lacking among funders and in IBVs.
- Planning is important, and the business plan highly affects the IBV needs.

8.3.2.1 Record Keeping & Financial Control
Board Member A (2017) have got help from investors as they have provided him with financial advisory and financial control as Board Member A have a non-financial background and is a CEO of a small business venture with only five employees. There will be a more extensive lack of corporate governance practices in younger business ventures compared to older ones as there is no formal management structure implemented yet.

Board Member B (2017) described the need for more practices, for example, record keeping and financial control in industrial companies. Board Member B (2017) has seen cases with lack of formal reporting, accounting and analyzing of follow-ups which are a clear indication of lack of corporate governance practices in industrial business ventures. It is of great importance to have proper record keeping and financial control in business ventures (Board Member B, 2017). Board Member C (2017) mentioned that Company C was managed financially by the CVC investor, but when Board Member C joined the business venture, he took over the financial controller role and decreased the need for value-added activities from the investor. Good record keeping and financial control also increase the chance of business survival (Lussier, 1995).

8.3.2.2 Planning
Business plans will differ depending on the amount of capital available for the business venture, but it is important to manage the available resources in an efficient way to reach the next stage of company growth, according to Investment Manager E (2017). Investment manager C (2017) and Investment Manager D (2017) especially emphasized that the business plan has a significant impact on the needs of a company. Investment manager C (2017) argued that the needs are nearly the same in every sector and that the business venture needs rather depends on the business plan then the sector. Investment manager D (2017) argued that there is a great difference between service/consultancy businesses and product businesses when it comes to their needs as product businesses usually have their in-house production with complex supply chains and higher capital needs. Investment manager D (2017) described the industry sector as a sector where the long customer decision-making time can impact the business ventures strongly as it leads to lower business scalability. For example, within the automotive industry customers, usually require several years of decision-making time before acquiring a new product (Investment Manager D, 2017). Company F sells licenses for the use of their product instead of producing products themselves to manage the scarce funding environment (Board Member F, 2017). Company F’s business plan is to develop their product, so it is compatible
with the machinery that is currently used by their customers to have an easy implementation (Board Member F, 2017). In IBVs, showcasing a functioning product is not enough to become a successful venture, as scaling up production with a stable quality is quite challenging. Having a business plan is important according to Lussier’s S/F model, and these examples from the case companies showcase that the need for a well thought out business plan is important to ensure the survival of the business venture in that given environment. The business plan will also be affected by choice of market.

8.3.2.3 Choice of market
Products should not be made because they are fascinating but because it should be possible to commercialize them, so it is important to identify their market potential before the product launch (Investment Manager F, 2017). Investment Manager A (2017) argued that focusing on the right market is of importance, even though the product might work in several segments it is often not wise to try to address them all at once. Different market segments have different characteristics, and customers value things differently, meaning that a product’s rate of adoption characteristics depend on the choice of the market.

8.4 Product
In this subchapter three different sub needs will be analyzed: Patent, Product Diffusion and Product/Service Timing

Based on the Rate of Innovation Diffusion theory by Rogers (2003) the best-case scenario for product characteristics is that it has a high relative advantage, high compatibility, low complexity, high trialability and good observability. High relative advantage means that the product is better compared to competitors, high compatibility means that it is easy for customers to adapt the product. A product that has low complexity is easy to understand and use. High trialability means that it is easy for customers to explore the product for example without the need of long validation process. Good observability is when potential customers clearly can identify the advantages of a product.

A summary of key trends for Product:

- All companies have at least one patent, and 50 percent of IBVs are continuously working to develop new patents.
- Important to focus on the right market, as industries such as the automotive industry have long validation time and products are integrated slowly.
- Choice of the market can highly influence the implementation times of the product and furthermore the growth time of the company.

8.4.1 Patent
As previously mentioned, founders can be considered as experts in their specific field which also is shown by the number of companies that have patents and that they continuously developed their product, as can be seen in Table 8. Since Company F is selling licenses for using their patented solutions, it is important for them to develop their products continuously to stay innovative (Board Member F, 2017). Therefore, it is also important to carefully evaluate patents, making it almost impossible for customers and competitors to work around them and thereby stopping competitors making similar products (Board Member F, 2017). Both Board Member A (2017) and Board Member D (2017) express the importance of patenting the right solution while keeping some of the know-hows in-house since some patents can be easily
worked around, and when know-how becomes a patent, it is available for the market and searchable by competitors.

Table 8. The amount of IBVs that have patents and continuously develop products and new patents.

<table>
<thead>
<tr>
<th></th>
<th>Yes</th>
<th>No</th>
</tr>
</thead>
<tbody>
<tr>
<td>Do you have any patent on your products?</td>
<td>100 %</td>
<td>0 %</td>
</tr>
<tr>
<td>Does the company have any more patents beyond the initial patent?</td>
<td>50 %</td>
<td>50 %</td>
</tr>
</tbody>
</table>

8.4.2 Product diffusion

The industry sector is a sector with high cyclicality, and lack of stability and predictability makes investing in industrial companies challenging (Investment Manager G, 2017). Investment managers described the industrial sector as a sector that has customers that need longer decision-making time although this does depend on the choice of business plan and market (Investment Manager D, 2017). Therefore, Investment Manager A (2017) and Investment Manager D (2017) have described the importance of understanding the market when investing in a company. It is shown in Table 9 that Company E and Company F have customers that in some cases required several years of decision-making time until deciding to buy the product. The decision-making time of customers refers to how long time a customer needs before deciding to acquire a product. The reason decision-making time is interesting is to understand how long time customers need before deciding to buy a product and to understand the complexity of product implementation. In some sectors, like in the automotive industry, when the manufacturer is planning to implement a new product/process extensive testing is required before the new product/process can be implemented and used (Board Member E, 2017). Therefore, decision-making time is of interest as it shows how much time customers need for validation and testing before they decide to buy the solution and implement it in full scale.

Three out six companies have described that their customers need a minimum of six months until deciding to implement or buy a product, while some customers took more than five years, as seen in Table 9. As for Company F, customers are mainly from the automotive industry, and Board Member F (2017) agree with Board Member E (2017) that the validation process is long and it can take between 4-7 years for the customers to adapt and to implement a new product/process in full scale. Board Member E (2017) mentioned the example of customers that have been interested to buy the product and Board Member E has been in contact with them for three years until they decided to invest in Company E’s solution. The telecom industry has been a more attractive market choice for Company E, as there is no need for long validation process like in the automotive industry (Board Member E, 2017). Therefore, the use of Roger’s model to measure the rate of innovation is important and used to analyze a product's characteristics and also to show how different markets vary and affect a product's speed of diffusion into a market.

The classification seen in Table 9 for the different product characteristics in terms of relative advantage, compatibility, complexity, trialability and observability was based on the board member answers and then classified according to their answers. Therefore, this classification are somewhat objective and should be seen just as indicators and show how rate of innovation affects IBVs.
Table 9. Shows the product diffusion factors from the interviewed IBVs and other relevant key factors.

<table>
<thead>
<tr>
<th>Company</th>
<th>Company A</th>
<th>Company B</th>
<th>Company C</th>
<th>Company D</th>
<th>Company E</th>
<th>Company F</th>
</tr>
</thead>
<tbody>
<tr>
<td>Product Offering</td>
<td>Waterjet cutting</td>
<td>EPS plastics production</td>
<td>tilt rotators, quick couplers, for excavator</td>
<td>Dynamic glass production</td>
<td>Production process solution in Sweden,</td>
<td>Metal coating, technology</td>
</tr>
<tr>
<td>Employees</td>
<td>5</td>
<td>400</td>
<td>43</td>
<td>20</td>
<td>1</td>
<td>16</td>
</tr>
<tr>
<td>Revenues</td>
<td>6 MSEK</td>
<td>1,6 BSEK</td>
<td>275 MSEK</td>
<td>0.2 MSEK</td>
<td>5 MSEK</td>
<td>9 MSEK</td>
</tr>
<tr>
<td>Decision making time (customers)</td>
<td>0.5 - 1.5 Years</td>
<td>0 - 0.5 Years</td>
<td>0 - 0.5 Years</td>
<td>0 - 0.5 Years</td>
<td>1 - 10 Years</td>
<td>4 - 7 Years</td>
</tr>
<tr>
<td>Relative Advantage, compared to competitors</td>
<td>Higher precision</td>
<td>Same as others, better service,</td>
<td>Popular functions, Stable product, better performance</td>
<td>Lower energy usage, new better service solution</td>
<td>Cheaper transportati on, 30% lower weight</td>
<td>Better performance for the same price/equally good for lower price.</td>
</tr>
<tr>
<td>Compatibility</td>
<td>High</td>
<td>High</td>
<td>High</td>
<td>High</td>
<td>Low</td>
<td>Low</td>
</tr>
<tr>
<td>Complexity</td>
<td>Low</td>
<td>Low</td>
<td>Low</td>
<td>High</td>
<td>High</td>
<td>High</td>
</tr>
<tr>
<td>Triability</td>
<td>Easy</td>
<td>Easy</td>
<td>Easy</td>
<td>Easy</td>
<td>Difficult</td>
<td>Difficult</td>
</tr>
<tr>
<td>Observability</td>
<td>Poor</td>
<td>Good</td>
<td>Good</td>
<td>Poor</td>
<td>Good</td>
<td>Medium</td>
</tr>
<tr>
<td>Price</td>
<td>Same</td>
<td>Almost same</td>
<td>Almost same</td>
<td>Missing</td>
<td>Can’t be compared</td>
<td>Same price or Cheaper</td>
</tr>
</tbody>
</table>

The Rate of Innovation Diffusion data in Table 9 shows that interviewed IBV products need time for adaption as their products in three out of six cases have high complexity and four out of six cases, poor or medium observability. Board Member D mentioned that it is difficult to explain their product to customers. Customers require time for decision-making and usually after explanation the customers can see the benefits of the product (Board Member A, 2017; Board Member E, 2017). Company A travels out to customers to highlight their product, but
sometimes it can be challenging to find the decision makers in a company, that are both interested in buying the product and also understand its benefits (Board Member A, 2017).

Most companies see their products as good as their competitors’ products or in some cases even better, as seen in Table 9, but still, demand is lacking. There is a need to explain what the product benefits are continuously. Board Member D (2017) also stated that they believe that their product offers the same quality at a better price than competitors but customers still may have difficulties in understanding the product and why it is beneficial for them due to poor observability. Improving observability, therefore, requires time for continues explanation of product benefits for customers.

8.4.3 Product/Service Timing
To know which market to enter is important and it is advisable to start with launching the product in one market at the time, to make the biggest impact with as little resources as possible (Investment Manager A, 2017). Company A’s product has potential in several markets, but it is challenging to find the right market for product launch initially. Therefore, active investor advice can help an IBV to find the right market which was mentioned by both Board Member A (2017) and Board Member F (2017). The received help in finding the right market was a very useful added value activity (Board Member A, 2017).

Board Member A (2017), Board Member D (2017) and Board Member E (2017) mentioned that they need to explain their product to the customers so that they understand their advantages. Their products are based on patents and offer a much superior performance compared to their competitors’ products. These three IBVs are relatively new businesses, still at their early stage of business development and therefore their products may be too new for the market and need time for innovation adaption. Lussier’s model shows that business with products that are in the growth stage has bigger chance to survive compared to business ventures with products that are too new or too old. If customers are not provided with any product explanation or are not aware of the existence of the products, it is challenging to succeed.

8.5 Professional Advisory
Professional advisory is a success factor in Lussier’s S/F model (1995), and it states that a business venture with professional advisory help has a bigger chance to succeed. Professional advisory can be in form of active investors, and therefore it is of interest to understand what different criteria that are important for them to invest in a business venture.

A summary of key trends for Professional Advisory:

- High cyclicality in the industry sector results in unpredictability and requires the need for good market timing.
- Active investors prefer to invest in scalable business ventures. IBVs typically require large investments and the lack of scalability due to market conditions results in low investor interest.
- Having a good product is not enough for active investors to invest in a business, it also a requirement that the teams are well diversified with members and set of skills that are complementing each other.

8.5.1 Professional Advisory Value-Added Activities
Sapienza and Timmons (1989) research have defined value-added activities into three main categories, strategic, interpersonal and networking which all active investors expressed that
they help business ventures with. All investment managers described themselves as active investors as they are helping their portfolio companies with a broad variety of value-added activities. Investor A, Investor B, and Investor D add value by providing financial advice and sector knowledge as a confident, market analysis on a strategic level and may even add value in operational questions if the investment managers have enough sector experience (Investment Manager A, 2017; Investment Manager B, 2017; Investment Manager D, 2017). All investors mentioned that they may hire managers with more sector knowledge as a board member in their portfolio business venture as Investor E hired Board Member B, as an added networking value (Sapienza and Timmons 1989). While Board Member A (2017) have confirmed that the financial advice they have received, and investors helping as a sounding board was a great added value for their company. Sapienza and Timmons (1989) definition of value-added activities are relevant and correctly describes what the interviewed investment managers are doing in their business venture investments. In this thesis, the actual amount of value added by these activities were not researched. However, Baum and Silverman (2004), Dimov and De Clercq (2006), Bottazzi et al. (2008) research shows that venture capital expertise add value to new ventures still hold relevance. These researchers confirm the investors’ view, that they, in fact, add value to their investments. While studies from Lee and Wahal (2004), Brau et.al (2004) and Florin (2005) show, no difference between non-VC backed and VC firm backed business ventures regarding before and after IPO performances. A study performed by Bernstein (2016) indicated that more active VC monitoring results in higher rate of innovation and also increases the number of new patents in a portfolio business venture, confirming the added value by active investors. While Lussier (1995) models state that business ventures that use professional advisors, such as venture capital firms have a smaller chance of ending up in bankruptcy compared to business ventures without the professional advisors.

8.5.2 Active Investor views on IBVs
Customers in the industrial sector have longer buying processes, and the scalability of these type of business ventures may be limited due to their customers’ longer decision-making time. The lack of scalability leads to a lower interest from active investors, especially in the early stage of a business venture (Investment Manager D, 2017). Therefore, some of the state-funded investors have an industrial focus to help IBVs (Investment Manager D, 2017). There are of course segments in the industrial sector that are growing with double digits each year, and it also depends on the specific industrial segment the venture is in (Investment Manager D, 2017). It is the scalability that is a challenge in the industrial sector, and Investment Manager G (2017) says that there are more careful with industrial companies as it is a cyclical sector and investment returns very much depend on the market conditions. This lack of stability and predictability makes investing in industrial companies challenging as it is difficult to manage and control the ever-changing market. Timing the market will be the key for becoming a successful investor focused on the industry sector (Investment Manager G, 2017).

8.5.3 IBVs view on AIs
A report by Svensson (2017) has mentioned that upon asking business ventures what kind of source capital funding they preferred, venture capital as a funding source was not preferred and ended up at the eleventh place of the list. Business owners prefer to maintain their level of ownership in their business ventures according to Svensson (2017). Board Member E (2017) and his partner did not accept any funding from investors as they would be left with barely any share of ownership in the company in if they would have accepted the required amount of funding they needed.
8.5.4 Active Investor Requirements

Active investors have requirements that they more or less demand when considering to invest in a company. This chapter is divided into subcategories of requirements that includes Product, Team and Scalability requirements. Product is divided into sub-requirements that include Market & Product Timing and Uniqueness & Barriers. Team subcategory is divided into sub-requirements that include Complete Team, Management, and the Right Personality. Scalability has one sub-requirement that is Business Plan. All the key active investor requirements that will be discussed in this chapter will then be summarized and presented in Our Active Investor Requirements Framework. This framework is based on some of the most crucial requirements that active investors use as a base to analyze business ventures before they invest in them.

8.5.4.1 Product

In this section, investor requirements on the Product will be discussed and include sub-requirements that are Market & Product Timing, and Uniqueness & Barriers.

Market & Product timing:
According to Investment Manager F (2017), it is important that the business venture has good insight on the market they operate in. All interviewed investors prefer to invest in business ventures that have a possibility for further business expansion. Investment Manager A (2017) and Investment Manager D (2017) mentioned that their firm looked at the market before investing in a company. For them, it is important not just choosing the right company but also choosing the company that is in a growing market, as all the interviewed investors invest in potential growth companies. Analyzing the market is part of the due diligence process mentioned by all the other interviewed investment managers. Product/service timing is a factor in Lussier’s (1995) S/F model and also describes the importance of choosing the right market as a business venture. Choosing the right company that is in the right market is important for investors as it is fundamentally connected to the scalability for a business venture. Therefore, Market & Product Timing is an essential requirement that investors analyze before investing in a company and is an IBV need that also helps to get professional advisory easier. Analyzing the business plan is part of the due diligence process for all the investors (Investment Manager A, 2017; Investment Manager B, 2017; Investment Manager C, 2017; Investment Manager D, 2017; Investment Manager E, 2017; Investment Manager G, 2017).

Uniqueness Barriers
Investor E require a complete team as well as a promising product to make an investment, and it is also important that the business venture has a uniqueness that is somewhat protected which could mean either a unique team or product (Investment Manager E, 2017). The uniqueness is necessary to differentiate the business venture from competitors according to Investment Manager E (2017). Investment Manager F (2017) mentioned that having unique knowledge is important and it is good if the team are pioneers in a specific area.

Investment managers viewed patents as somewhat important. Both Investment Manager A (2017) and Investment Manager B (2017) have expressed the value of patent when investing in a company and that is something they look for. Investment Manager E (2017) require that the business venture is complete with a promising product and certain level of uniqueness to somehow protect it from competitors. Investment Manager E (2017) also mentioned that without anything unique in the product, it would be difficult to compete on the market even for a great team.
8.5.4.2 Complete Team

Investment manager C (2017) and Investment Manager D (2017) especially emphasized that it is the business plan itself that impact the needs of a company. An investment ready business venture does not only need someone that can create a product, but it also requires that the team have the knowledge to run and manage a company, create a business plan and make a budget for different initiatives (Investment Management E, 2017).

Team dynamics is at least as important as leadership or maybe the most important aspect according to Investment Manager F (2017) as cohesion as well as trust will lead to effective teamwork. Complementing each other is important, as one cannot invest in a team of only experts in one specific technical field, or into a team only focused on sales. Therefore, it is important that the team is well diversified both regarding competence and personalities (Investment Manager F, 2017). Investor E has made evaluations, which have shown that the performance (positive or negative) depends on the teams in a business venture. Therefore, a complete team is an essential requirement that investors analyze before investing in a company. Hence it is an IBV need to get professional advisory easier.

Openness

Fried and Hisrich (1995) has described and labeled VC firms as "relationship investors" as the need for a good relationship between the VC investor and the CEO are of great importance to be able to create any value. This previous research result has been confirmed by the Investors, as they have mentioned that the relationship with the company CEO or founder is of great importance and connecting on a personal level is crucial (Investment Manager A, 2017; Investment Manager B, 2017; Investment Manager C, 2017; Investment Manager D, 2017; Investment Manager E, 2017). Having a good relationship makes the collaboration easier according to all investment managers. Investment Manager B (2017) argued that IBVs have larger needs of management knowledge than the regular business venture and that they are mostly focused on the product. He also mentioned that founders often believe that they know what is best for their business venture, but they need to be more open to professional advice since they are not experts within management.

Management

Investment Manager B (2017), Investment Manager C (2017), Investment Manager F (2017) and Investment Manager G (2017) argued that it is of great importance for them that the business venture has good management to consider investing in a business venture. Investment Manager F (2017) described that they invest in a business venture that has all types of knowledge that are required to run a business. However, there are no perfect management teams, and some qualities may be lacking. Previous experience in managing a business is therefore highly valued (Investment Manager F, 2017). Investment Manager F (2017) view can be connected to the S/F model by Lussier (1995) that states that business ventures with prior management experience have a higher chance of survival compared to those without it.

8.5.4.3 Scalability

Customers in the industrial sector have longer, more complicated buying processes (Investment Manager D, 2017). Therefore, the scalability of industrial business ventures may be limited due to their customers, and the lack of scalability leads to lower active investor interests, particularly at an early stage (Investment Manager D, 2017). This is one reason why state-funded investors have an industrial focus to help IBVs (Investment Manager D, 2017). There are of course segments in the industrial sector that are growing by double digits each year so it may also depend on the specific industrial company (Investment Manager D, 2017). It is the scalability
that is challenging in the industry sector according to Investment Manager B (2017). Therefore, there may be just a few investors that are willing to invest in IBVs, as they are not as scalable as other types of firms. Investment Manager G (2017) described industrials as, a sector that is seen by other investors as less stable and predictable compared to other sectors and this makes investing in industrial companies challenging.

**Business Plan**
Investment Manager E (2017) mentioned that early stage investors prefer scalable business plans that enable fast growth that for example is common in IT. Investment manager C (2017) and Investment Manager D (2017) especially emphasized that it is the business plan itself that impact the needs of a company. Investment manager D (2017) argued that there is a great difference between service/consultancy businesses and product businesses when it comes to their needs and choice of business plan.

**Our Active Investor Requirements Framework**
This framework is based on the requirements described in the Active Investor Requirements, subchapter 5.4. Our Active Investor Requirements Framework has three subcategories that are Product, Team, and Scalability. The Product subcategory is divided into sub-requirements that include Market & Product Timing and Uniqueness & Barriers. The Complete Team subcategory is divided into sub-requirements that include Management and Right Personality. The Scalability subcategory is divided into one sub-requirement which is Business Plan. The structure of Active Investor Requirements is shown in Figure 11.

![Figure 11. Shows Our Active Investor Requirements Framework with some of the most important requirements that the active investors analyze before investing in a business venture.](attachment:figure11.png)

Our Active Investor Requirements Framework will be part of the Professional Advisory section in Our Revised IBV Needs Framework as a subcategory. Our Active Investor Requirements Framework describes the most important requirements that active investors have when deciding to invest in a business venture. As it is essential for an industrial business ventures survival to fulfill the requirements of active investors to receive funding and the added value activities (Lussier, 1995).

**8.6 Summary**
Our Revised IBV Needs Framework will be explained hereafter, based on the results and the analysis of interviews. The interviews have enabled the testing of Our IBV Needs Framework, and the new findings required to develop a Revised IBV Needs Framework.
8.6.1 Our Revised IBV Needs Framework

Our IBV Needs Framework has been explained earlier in the theories chapter. Based on the interview results and the analysis a new revised IBV Needs Framework has been developed to more accurately describe the key IBV needs. Our Revised IBV Needs Framework has been tested and revised based on the interviews and then expanded to include four new subfactors. Choice of Market will be added as a new sub need as part of the Corporate Governance subcategory. Three sub-requirements will be added to the Professional Advisory subcategory.

*Choice of market* - describes the need to choose the growth markets when for example launching a business venture or new product. It has been added as sub need under Corporate Governance as it is strongly connected to Planning and both the interviewed investors and companies expressed the importance of choosing the right market. Different markets have different types of customer that will have different types of requirements and decision making will have a great impact on the future success of a business venture.

New sub-requirements will be added as part of the Professional Advisory category in Our Revised IBV Needs Framework and will include all the factors mentioned in the Active Investor Requirements Framework. Active Investor Requirements Framework has three main subcategories: Product, Complete Team, and Scalability. All three have sub-requirements, and all these requirements should be met to increase the chance of receiving active investor help in a business venture. These requirements were added to explain what expectations active investors have to invest in a company. It was necessary to revise Our Framework better reflect the reality and increase the knowledge about the relationship between active investors and business venture and business ventures’ needs.

The Product subcategory is divided into sub-requirements that include Market & Product Timing and Uniqueness & Barriers. The Complete Team subcategory is divided into sub-requirements that include Management and Right Personality. Scalability subcategory has one sub-requirement which is Business Plan.

Our Revised IBV Needs Framework can be seen below in Figure 12 and now includes the four new subfactors, including Choice of Market and the three subcategories from Our Active Investor Requirements Framework.
Every industrial business venture has the same type of basic needs, but the amount of each need varies between them depending on which growth stage they are in and what sort of business plan they have. However, there are some IBV sector specific trends of needs that have been identified from the interviews, theories, and literature. In Figure 13 IBV specific needs based on Our Revised IBV Needs Framework have been added with a description of the different needs and key trends.
### Key Trends in the IBV Framework

<table>
<thead>
<tr>
<th>Capital</th>
<th>Education &amp; Experience</th>
<th>Corporate Governance</th>
<th>Product</th>
<th>Professional Advisory Requirements</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Funding:</strong></td>
<td>Technical Education:</td>
<td>Record Keeping &amp;</td>
<td>Patent: Patents are needed to</td>
<td>Product: Market &amp; Product</td>
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<tr>
<td></td>
<td>Generally, a minimum</td>
<td>Financial Control:</td>
<td>enable uniqueness by creating</td>
<td>timing: Growing markets are</td>
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<td></td>
<td>of MSc in engineering</td>
<td>As management</td>
<td>barriers against competitors.</td>
<td>preferred.</td>
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<tr>
<td></td>
<td>is needed to be able</td>
<td>knowledge is</td>
<td>Requires high technological</td>
<td>Uniqueness and Barriers: Either in</td>
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<tr>
<td></td>
<td>to start an IBV,</td>
<td>lacking, record</td>
<td>knowledge.</td>
<td>the form of patents or an</td>
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<tr>
<td></td>
<td>although a Ph.D. is</td>
<td>keeping and</td>
<td></td>
<td>edge that makes the product</td>
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<td></td>
<td>preferred.</td>
<td>financial controls</td>
<td></td>
<td>unique.</td>
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<tr>
<td></td>
<td></td>
<td>are needed.</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Management:</strong></td>
<td>Management: IBV</td>
<td>Planning:</td>
<td>Product Diffusion: A high rate</td>
<td>Complete Team: With a diversified</td>
</tr>
<tr>
<td></td>
<td>founders typically</td>
<td>Having the right</td>
<td>of innovation diffusion is</td>
<td>management sales/technical</td>
</tr>
<tr>
<td></td>
<td>lack the management</td>
<td>business plan is</td>
<td>needed to enable scalability and</td>
<td>knowledge.</td>
</tr>
<tr>
<td></td>
<td>experience needed and</td>
<td>needed to be able to</td>
<td>make integration and usage</td>
<td>Openness: Important to have a</td>
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<tr>
<td></td>
<td>is therefore seen as a</td>
<td>handle the equity</td>
<td>easier.</td>
<td>personal relationship and connection</td>
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<td></td>
<td>need.</td>
<td>gap and choose both</td>
<td></td>
<td>between the IBV and AI.</td>
</tr>
<tr>
<td><strong>Economic Timing:</strong></td>
<td>Economic Timing:</td>
<td>Planning:</td>
<td></td>
<td>Management: Good management is</td>
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<td></td>
<td>Market environment has</td>
<td>Planning:</td>
<td></td>
<td>preferred.</td>
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<td>a great impact on</td>
<td>Planning:</td>
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<td></td>
<td>capital availability,</td>
<td>Planning:</td>
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<td></td>
<td>described by both</td>
<td>Planning:</td>
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<td></td>
<td>industrial business</td>
<td>Planning:</td>
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<td></td>
<td>ventures and active</td>
<td>Planning:</td>
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<td></td>
<td>investors.</td>
<td>Planning:</td>
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<tr>
<td></td>
<td></td>
<td>Planning:</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Industry:</strong></td>
<td>Industry Experience:</td>
<td>Choice of Market:</td>
<td>Product/Service Timing: Picking</td>
<td>Scalability: It is important for</td>
</tr>
<tr>
<td></td>
<td>IBV founders usually</td>
<td>it is important to</td>
<td>the right product choosing the</td>
<td>active investors that businesses</td>
</tr>
<tr>
<td></td>
<td>lack the industry</td>
<td>choose the right</td>
<td>right market in a growth stage</td>
<td>they invest has a scalable</td>
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<tr>
<td></td>
<td>experience needed and</td>
<td>market because it</td>
<td>with short customer decision-</td>
<td>business plan and it is therefore</td>
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<tr>
<td></td>
<td>is therefore seen as a</td>
<td>impacts the speed of</td>
<td>making time.</td>
<td>considered as a need.</td>
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<tr>
<td></td>
<td>need.</td>
<td>product diffusion as</td>
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<td></td>
<td></td>
<td>different markets</td>
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</tbody>
</table>

*Figure 13. Our Revised IBV Needs Framework including key trends.*
9. Discussion

This chapter will present a discussion about the methods chosen, ethics and the main results and analysis. It will also include a discussion about our theoretical framework followed by a discussion of the reliability, validity, and generalizability of the found results.

9.1 Methods

This subchapter will present a general discussion of the methods used to for the thesis and how the chosen method may have effects on the thesis.

This thesis focus was to investigate business venture needs within the industrial sector in Sweden. A subject that in its whole have never been studied before, as it is both focused on a specific sector and a specific country. Many studies have been conducted about various subtopics related to this thesis for example by Lussier’s (1995) S/F model that explores the most important factors that are needed for a business to survive. Numerous studies have been conducted about active investors value-added activities previously. Some of these studies have been performed by Sapienza et al. (1996), Lee and Wahal (2004), Brau et al. (2004), and Florin (2005). Investment climate with a VC focus in Sweden has also been researched by Krokgård (2016). The unique focus of this thesis focus in Sweden has also been researched by Krokgård (2016). The unique focus of this thesis meant that there was a risk of missing important theories and literature which could have affected the results and analysis of the thesis. The use of semi-structured interviews as the choice of method, therefore, helped to confirm the relevance of the chosen theories and literature, while it also provided new discoveries.

The chosen method was to conduct interviews with a semi-structured form with questions that had an open character to provide the flexibility needed to explore new ideas while also have the structure for analysis and closer inspection for comparison between the different interview cases. The open questions were the main guideline in the interview template and enabled the option for follow-up questions. An option that was used extensively throughout the interview process to gain deeper knowledge. Due to limited time availability and limited interest, especially from the industrial business ventures, where only six interviews were conducted with business ventures. The decision to interview investors in addition to industrial business ventures was made to gain another perspective on the subject. Lussier’s S/F model (1994) also mentions professional advisory as a factor that increases the chance of a company's survival. The higher active investor interest made it possible to conduct seven investor interviews, although with only six VC firms. Two of the interviewed company board members were once investment managers themselves, and that meant that they were able to provide knowledge to both the investor perspectives and the company perspective. By interviewing both board members and investment managers, their views can be compared with existing literature and theories to confirm or deny existing market trends and theories.

The six company cases had different types of products and had various sizes. From one employee with almost no revenues to several hundred of employees with hundreds of million SEK in revenues meant that needs might vary from case to case basis.

VC investors’ interest were somewhat limited. Therefore, both PE and CVC investors were interviewed to enable a deeper understanding of the subject in question. Interviewing different type of active investors meant that they invest in different phases of a company’s development.
That enabled a comparison between investment manager’s views that invest in a specific phase with the view of the board members that are in the same phase of their business development.

9.1.2 Ethics

Blomkvist and Hallin (2015) mentions that one is expected to behave in an ethically correct manner in the different phases of a degree project and one should follow certain rules, ensuring that nobody will be harmed by the work created. In Sweden, the Swedish Research Council’s principles of ethical research for the humanities and social science is the most commonly used ethical code that describes four different requirements that should be followed.

Firstly, the Information requirement will be described. The Information requirement is when the researcher should inform the studied individuals about the purpose of the thesis (Blomkvist and Hallin, 2015). This requirement has been followed by before the interviews informing the respondents about the purpose and background in e-mails. Furthermore, the intention and purpose of the thesis has been repeated and presented at the beginning of each interview which also have given the interviewees a better idea of what is expected and if they are suited to participate in the thesis.

Secondly, the consent requirement, participants are required to agree on participating in the study (Blomkvist and Hallin, 2015). Same as in the first requirement the interview respondents have been asked both in e-mail and at the beginning of every interview if they are agreeing on participating in this thesis.

Thirdly, the confidentiality requirement will be described. The confidentiality requirement means that collected material should be confidentially treated (Blomkvist and Hallin, 2015). The requirement has been followed by before each interview giving each respondent the alternative to be anonymous. They have also been provided to option to be considered as anonymous initially and at a later stage decide if they would like to remain anonymous after they have been sent their responses that have been used in a version of the thesis before the final submission. All the respondents have been sent their responses that have been used in the thesis as well as the short company presentations that are used. This has been done to control if everything is interpreted correctly and to receive a final approval that all responses and company presentations can be used in the thesis.

Finally, the good use requirement will be described, the good use requirement means that collected material only should be used for the previously stated purpose (Blomkvist and Hallin, 2015). The collected qualitative data has only been utilized in this thesis and for no other purpose than the purpose shared with the respondents.

Furthermore, all interviews have been recorded on the respondent’s approval and later transcribed to better ensure that all responses were correctly perceived and used. Moreover, it was done in combination with taking notes digitally during interviews. As previously mention the responses were after that sent to each respondent to even further ensure right interpretation.

9.2 Results and Analysis

The subchapter will provide a discussion about results and the analysis part from a reliability, validity and generalizability perspective.
9.2.1 Our Theoretical Framework
The theoretical framework is based on literature and theories that are relevant from a general business venture perspective, and literature and theory that are more relevant for business ventures that are technical intensive. Lussier’s S/F model and corporate governance are suited for business ventures in general. The Rate of Innovation Diffusion, competence gap, and equity gap are theories and literature used to identify needs that are more specific for business ventures that are technical intensive. This framework has after its creation has been tested by the use of primary sources in the form of interviews where industrial business ventures have provided an insight view, and active investors have provided a general view on IBVs as well as BVs. After analyzing the framework with the help of qualitative semi-structured interviews, the framework has been revised and extended to better suit the identified needs of IBVs. One challenge with the framework is that some needs can be affected by different subcategories and needs are overlapping with other needs. Some needs could, therefore, be linked to more than one subcategory but that would have complicated the model, and the decision was to keep it as simple as possible. Some factors from Lussier's model were kept out of this framework to have a simpler structure and due to that these factors are impossible or difficult to effect, such as if the founders belong to a minority group or if parents have owned a business or not.

9.2.2 Reliability and Validity
Reliability and Validity are measures that are important to ensure that quality of the thesis. Reliability is the ability to in the thesis obtain the same results repeatedly, and the results are considered to have high reliability if the same results are obtained several times (Saunders et al., 2009). The validity refers to if the research measured what it was intended to measure and if the right subject was studied seen to the research question (Saunders et al., 2009). This thesis has a qualitative approach which means that it heavily relies on the researcher observations while conducting interviews for primary source collection (Collis, Hussey; 2013) and conducting the analysis of the results from the interviews. Qualitative studies are dependent on the researcher and is therefore seen as a research method with low reliability (Madill et al., 2010). The quality of the interviews will depend on how open interview situation will be between the interviewer and interviewee (Blomkvist, Hallin; 2015). Replicating the results from a qualitative study based on an interview may, therefore, be difficult. Before each interview, the interview template was sent to the interviewees so that they would have time to prepare and thereby increased the validity of the thesis. Before each interview was conducted, an explanation with a declaration about the thesis was given. The relevance of the thesis was also explained, and the option to ask further questions about the subject were offered for the interviewees thus ensuring a high validity for this thesis.

To improve the reliability of the thesis interviews were recorded and notes were taken while conducting the interview (Blomkvist, Hallin; 2015). Before conducting the interview, all participant’s approval was asked so that the answers could be recorded. All participants have approved to be recorded. The interviews after a conducted interview as well as notes were transcribed. The option of anonymity was also offered before conducting the interviews. The used results from the transcripts have been sent to the interviewee to offer the option for verification and approval of their answers.

This thesis studies the relevant subject asked by the research questions while the research question is also answered by using valid and reliable academic sources. Therefore, the research question has a high validity (Collis, Hussey; 2013). The quality of sources has been extensively discussed and studied to ensure their reliability and relevance for this thesis.
The interviewees had various backgrounds. While board members in some cases represented both their company and an investor which may have influenced them so that they would provide information that would be more beneficial for their investor or company. Anonymity was offered in all interview cases to minimize this potential decrease in reliability. As there are such of a high number of interview cases that are anonymous, they will increase the validity of the report while also decreases its reliability as it will be difficult to replicate these results.

Since investor roles of are different from board member roles, they may be more unbiased than if just the founders were interviewed. Further, the insight from active investors that have experience from several different business ventures makes the research more unbiased and increases the validity.

9.2.2 Generalizability
Investigating the needs and trends for industrial business ventures was the general purpose of this thesis as well as investigating why these business ventures have those needs and what can be done to affect those needs.

It is described in chapter 2 that six different case studies were conducted in six different companies. It is implied that case studies will decrease the generalizability of the thesis according to Collis and Hussey (2013) and they can never be fully generalizable. However, seven interviews were conducted with investment managers from six different investment firms and two of the interviewed board members from the companies had previous investor knowledge. Since these interviewees have invested in different companies within the industrial sector, they can provide a more general view on the needs of industrial business ventures, increasing the generalizability. The generalizability of this thesis is higher compared to if the thesis would have used a fewer amount of cases, but even more, cases would have been preferred for a higher generalizability. The investigated business ventures were of different sizes and operated in various industrial segments which result in an increased generalizability due to a larger target area. To further increase the generalizability, one would need to investigate more business ventures in other industrial segments and of more different sizes. To conclude, future studies are recommended with a larger amount of case studies to draw conclusions that are of a more general nature. Quantitative studies are also of interest in this area to get more general conclusions.
10. Conclusions, Implications and Future Studies

This chapter includes key findings from industrial business ventures and active investor requirements for investing in an industrial business venture followed by answering the research question.

10.1 Key Findings

Key findings of this thesis are divided into two different categories in this subchapter, Needs of industrial business ventures and active investor requirements.

10.1.1 Industrial Business Ventures

The key findings of the needs in IBVs have been divided into the subcategories that are found in Our Framework, that being Capital needs, Education & Experience Needs, Corporate Governance and Product Needs.

Capital Needs

Our thesis shows that industrial business ventures have difficulties finding early-stage investments which indicate that there is an equity gap among IBVs in this stage. The lack of funding is a result of different factors. First, VC firms have moved to later investments mentioned by Rasila (2004) and showed by Kroksgård (2016) in his study of Swedish VC firms. Secondly, the industrial sector is cyclical and not as scalable as other sectors which result in low interest from active investors. Besides the lack of funding, IBVs typically demands big investments to initiate production, but the mismatch of the financing and required capital has resulted in that 50 percent of the investigated IBVs have developed alternative business plans which also is a necessity without the required capital. A second problematic aspect of the large required upfront investment that is needed for manufacturing is that active investors will demand a high percentage of ownership to minimize the risk of the investment which leads to a dilution of the founder ownership in the venture.

Education & Experience Needs

The interviewed IBVs show that high level of technical education is needed to be able to start a business venture in this sector. Therefore, Ph.D. is preferred, but there is also a company example where MSc in Engineering was the highest technical education among founders. Products or product ideas are often developed at universities during doctoral dissertation or by further research at universities. Therefore, universities provide an important platform for innovations and enable future IBV growth. Costs for research and development for product or product idea were in some company cases covered by universities, for example for Company E it meant a cost reduction of approximately 30 million SEK. Founders often have a long university background, but they frequently lack the industry experience that is needed to understand the sector. Active investors described IBV founders as extremely well educated in their specific field of expertise, but they underestimate costs, payback time in invested capital, and the need of staff, all that is necessary to build a successful IBV.

As previously mentioned it is a common trend that the investigated IBVs founder lack the management knowledge as well as capital which require a resource sensitive business plan. One example of this is Company F, which is selling licenses to customers, allowing them to produce Company F’s product ideas. This makes it possible to focus on the main competence, that is the technical knowledge, and there is no need for large investments in property, plant and equipment. This type of resource sensitive business management can be a possible solution for
a company that operates in a resource scarce environment where there is an equity gap. The lack of management education and experience among founders in IBVs is also problematic since it is a requirement from active investors that they only want to invest in complete teams with management experience. Management is however often hired at a later stage, but it can be difficult to reach that later stage without previous management experience in the team.

**Corporate Governance**

Corporate governance knowledge is also lacking among founders in the IBV cases. Building up an industrial business venture with production from scratch does, as mentioned by several investment managers require much capital and is time-consuming. As each IBV case have a different set of skill and resources available for use it is of importance to use a suitable business plan and to pick a growing market with the right economic timing to increase the chance of survival for the business venture. Investors prefer to invest in scalable business plans with an innovative product in growing markets and with complete teams, making the business plan and choice of market even more important. Which market and business plan an IBV chooses highly affect the needs of an IBV, and it is important to choose wisely, to better suit the competencies available in the IBV and to reduce the needs.

**Product**

All the interviewed IBVs in this thesis have at least one patent, and 50 percent of them have continuously developed their products and created more patents after the original patent. This is an indication that products are somewhat new and it may be difficult for customers to understand all the product advantages and applications of the products, which also is expressed by board members. It is mentioned that IBVs often need to explain their products to potential customers. In Lussier’s (1995) S/F model, it is mentioned that it is optimal to have products that are in the growth stage but considering most have to explain their products they can be regarded as too new, and it makes it difficult to sell the products. It has been identified that two IBVs are focused on the automotive industry where potential customers have shown much interest, but validation times can take more than five years, resulting in low income. Therefore, it is of importance to identify markets with customers that have faster implementation times to enable faster growth in the business venture.

**10.1.2 Active Investor**

It is important to note that even though the idea of added value activities is to help business ventures with management and corporate governance, active investors demand that business ventures have as many of these skills as possible before they invest in them. It is easier to develop and increase value creation for a company that is already good enough, than trying to develop a weaker company (Investment Manager G, 2017). This may also be one of the reasons why some industrial business ventures do not receive any funding from active investors, since founders lack these skills, as seen in the interviews and literature by Rasila (2004). The key findings of active investor requirements have been divided into subcategories that are based on the Active Investor Requirements Framework, being Product, Complete Team, and Scalability.

**Product**

For investors, it is important not just to choose the right company but also to choose the company that is in a growth market. All the interviewed investors invest in potential growth companies and use strategies to increase the scalability of the business venture for more value adding. It is important that the business venture has a uniqueness that is somewhat protected and this could either be a unique team or product. Therefore, investment managers viewed
patents as important as they create barriers and protect from competition (Investment Manager A, 2017; Investment Manager B 2017).

Complete Team
Investors value and want to maintain a good relationship between them and the CEO in the business venture they invest in (Fried and Hisrich, 1995). It is important for investors that the business venture they invest in has good management (Investment Manager B, 2017; Investment Manager C, 2017; Investment Manager F, 2017; Investment Manager G, 2017). An investment ready business venture does not only need someone who has the technical knowledge to create a product, but it also requires that the team have all the knowledge required to run and manage a company, creating a business plan and making a budget (Investment Manager F 2017). A well-diversified team is one that complements each other in both competencies and personalities. Previous experience in running a business is therefore highly valued and preferred by investors.

Scalability
Investment managers described the industrial sector as a sector that is more cyclical compared to other sectors, with low scalability and therefore it is less attractive for investors. As the industry sector is more cyclical compared to other sectors, it makes the industry sector highly unpredictable and dependent on the economic timing. The lack of scalability in IBVs may be explained by the long customer decision-making time, the poor compatibility, the high complexity, all that leads to a slow rate of innovation diffusion. All the interviewed investors prefer to invest in business ventures with a scalable business plan as these offer high-value creation.

10.1.3 Answering the Research Question
By combining the empirical findings from interviews with literature and theories, the research question for this thesis can be answered.

“What kind of needs does industrial business ventures have in Sweden, and how can those needs be better understood with the contribution of active investors?”

To answer the research question, the needs are divided into four subcategories, Capital, Competence, Product and Professional Advisory. Competence further is divided into Education & Experience and Corporate Governance.

Capital
It has been identified that the interviewed IBVs have a need of capital. Capital is especially difficult to receive in the early stage when it is needed for developing products and initiate production. This need can be difficult to manage but trying to make the IBV investment ready by fulfilling as many active investor requirements as possible is the best solution, and it will also be beneficial for the IBV even if no active investor funding will be received.

Competence
IBVs typically have founders that are experts in their specific field and therefore high technical education, preferably Ph.D. is considered as a need to start an IBV. However, the founders lack management education and experience as well as industry experience which also is mentioned by active investors. Founders often have the necessary education and expertise needed to create a product that one can build a successful business around and continuously develop but there is
a lack of required skills to be able to manage the IBV successfully. Planning is of particular importance and creating a business plan that suits the resources available is necessary.

**Product**

Patents are important for IBVs especially in the beginning to build up barriers against competitors and to create a unique offering which also makes an IBV more attractive for active investors. Furthermore, it is important to have a product that has characteristics that enable a high rate of innovation adoption for customers. Focusing on one market to capture a strong market share is recommend by investors. Therefore, the product launch market should be chosen wisely, and it should preferably be a market that typically has shorter implementation times.

**Professional Advisory**

Active investors provide added value activities that can be valuable for IBVs on top of the capital they provide. However, they have requirements that IBVs should fulfill to be good enough businesses to receive funding. These requirements can be seen as needs as they are also favoured qualities to build a stronger IBV. These requirements are important for the IBVs survival even if IBV founders do not prefer active investor funding. The requirements are divided into subcategories that are Product, Complete Team, and Scalability. Requirements for the product is that it should be unique in some way to differentiate the IBV from its competitors. Complete teams are required meaning teams should have well-diversified skills and personalities. Furthermore, active investors are mostly interested in scalable businesses that can grow fast. Therefore, IBV should focus on a growth market with a scalable business plan. Focusing on multiple markets should not be done initially (Investment Manager A, 2017).

**10.2 Contribution**

This chapter is divided into two parts, contribution to academic literature and contribution to industrial business ventures.

**10.2.1 Contribution to Academic Literature**

Industrial business ventures in Sweden is an area that is relatively unexplored and identifying specific needs in this sector has never been done before. Lussier (1995) has developed the S/F model that predicts if an early stage business will succeed or fail by identifying different success factors. The S/F model by Lussier (1995) is however not sector or country-specific. It has been identified by Kroksgård (2016) that early investments by venture capital have decreased in Sweden and business and industrial products is the sector with the least amount of investments which makes it an interesting area for further research to understand why that is so. With the lack of advisory help, this type business ventures have a bigger chance of bankruptcy (Lussier, 1995). The research into the needs of industrial business ventures is therefore highly relevant.

There are several findings on trends and needs for industrial business ventures in this thesis. Typically, there is a lack of capital at an early stage, and founders must spend much time finding capital instead of working on developing their business. Furthermore, it is found that active investors have relatively high requirements before investing in these companies and the lack of capital may in some of these cases be a result of not living up to the expectations of the investors.
10.2.2 Contribution to Industrial Business Ventures
This thesis contributes with insight in what needs business ventures have in the industrial sector. First, it goes through what is expected by a business venture by active investors to get funding and added value activities. The thesis also identifies common trends and problems in industrials seen from two different perspectives, the investor perspective and from within the industrial business ventures.

10.2.3 Contribution to Sustainability
A deeper understanding of the sector specific needs of industrial business ventures is of great interest as this sector has historically been a strong success factor behind the economic growth in Sweden. This sector will also have a key impact on the country's future economic success (Mckinsey, 2016). To ensure that resources for entrepreneurship and new business venturing are used as efficiently as possible, relevant research is needed. This thesis identifies sector specific IBV needs that can be better understood, although further research is needed. A more efficient use of capital may be ensured so that investments in IBVs may be more profitable than they were before. By using both state and private investor funds as efficiently as possible, the profitability of the venturing can be more secure and increase the chance of the business survival. For example, planning from Lussier’s (1995) S/F model is part of corporate governance practice, that is used to ensure that funds are used correctly, that is making sure the business is following its legal responsibilities while using funds efficiently to ensure profitability. As IBV needs are better understood, investing in IBVs will be less risky. Therefore, the amount of IBV invested capital could potentially grow and result in innovations, jobs and value creation for the country. Newly created jobs could potentially ensure better social sustainability and value creation will lead to higher living standards and increase the country's international competitiveness.

10.3 Recommendations on Future Research
It has been expressed by board members in industrial business ventures that there is a lack of state-funded incentives in Sweden which makes it difficult to start and develop new companies in Sweden. Therefore, it would be of interest to further research these incitements and state-funded funds to understand if they are poorly managed or if new business ventures do not have what is required to receive investments.

Business angels and business angel networks have commonly been mentioned and brought up as an important aspect for business ventures. There have been different opinions about their present and contribution in Sweden. It has been mentioned that their capital does not come close to individuals in the USA for example and it has also been mentioned that they may be more focused on scalable IT business ventures. Therefore, it would be of interest to research their interest in Swedish industrial business ventures as well as their contribution today.
11. References


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