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Readiness

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*Increasing the measurability of Investor Readiness*

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## Abstract

The following research aims to increase the measurability of investor readiness and especially management readiness. Investor readiness consists of three areas namely, technology readiness, market readiness and management readiness. The current investor readiness tools lack in measurability concerning the management. This research has proposed tools for all three areas of investor readiness but has focussed on increasing the measurability of the management readiness. In order to increase this measurability, important personality traits per company life cycle have been identified and a tool has been proposed which can measure these traits. Using this tool during the venture capital investment process, can lead to a more grounded investment decision with regards to the management readiness.

## Management summary

Starting a new business requires many different skills and resources. One of these resources, needed to grow and to develop, is capital. In the beginning of the start-up it can be funded by the owner(s). When the growth starts, most businesses will require additional capital. Venture capitalists are willing to take the risk on some occasions and invest money in a start-up in exchange for an equity stake in this start-up. Making an investment decision, venture capitalist look carefully for the balance between risk and reward; the start-up has to prove its investor readiness.

Investor readiness can be explained as the moment when a start-up is ready to attract an equity investment. According to the literature investor readiness is decomposed into three sub components: technology readiness, market readiness and management readiness.

Technology readiness and market readiness can be measured satisfactory using different tools. This thesis describes multiple widely accepted tools to measure these items. However, it is still difficult to measure the management readiness in an objective manner. Douglas and Shepherd (2002) made a first step by describing the way a business plan, the reaction to feedback, the composition of the team, the motivation for starting a venture and the personality of the management team should be composed. Unfortunately, Douglas and Shepherd (2002) did not provide an objective tool to measure and therefore they could not take away the idea that determining management readiness, though described in literature as of utmost importance, is based on a gut-feeling both with the investment manager as in the entrepreneur.

This study aims to increase the measurability of investor readiness and especially management readiness . The current investor readiness tools lack in the ability to measure the management in an objective and reliable way.

This study has proposed tools for all three areas of investor readiness. The tools for technology readiness and market readiness were drawn from literature. The focus in this study is put on the management readiness in order to measure this item in a reliable way. This has been done using both literature and new data collected via interviews and database research at a venture capital firm, PPM Oost, which can be considered as a representative sample for a venture capitalist. These interviews gave an insight in the personality traits found important by the investment managers for entrepreneurs or management teams to possess. The database research showed the selection and rejection criteria of a proposition commonly mentioned by the investment managers of PPM Oost. To measure the personality traits, the ODC test, developed by the ODIN institute, was introduced. The ODC test has the ability to access personality traits in a valid and reliable and, not at least

important, in an objective manner. During tests on a small population, the practical worth of the increased measurability has been indicated. These tools can form a valuable contribution to existing tools by adding new measurable dimensions with regards to the management readiness. Furthermore, by combining both literature and new conducted research important personality traits for the management team of a start-up have been identified which can be tested with the proposed tool. All in all, this study has added in increasing the measurability of investor readiness and especially the management readiness.

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## 1. Introduction

Starting a new business is difficult, it requires many different skills and resources. One of these resources that is needed in order to grow and develop is capital. In the beginning of the start-up it can be funded by the owner(s). When the first growth starts, family and friends are in most cases asked for capital (Kotha & George, 2012), in order to finance the growth. Nonetheless, most businesses will require additional capital. This capital can be borrowed from banks by larger companies, for a start-up this is difficult because they cannot provide a bank with collateral. However, venture capitalists are willing to take the risk on some occasions and invest money in a start-up in exchange for an equity stake in this start-up.

While it is known that it is important for an entrepreneur to be able to attract venture capital in order to finance growth for some start-ups, less is known about how an entrepreneur should prepare his/her venture in order to make it more attractive for venture capitalists, or when it is ready to attract capital. Attracting venture capital requires specific knowledge and skills. The selection and rejection criteria venture capitalists use has been a topic which sparked the interest of many researchers (Hudson, 2005; I. MacMillan, Siegel, & Narasimha, 1986). These researches have provided lists with selection and rejection criteria or reasons. Nonetheless, venture capitalists receive many investment propositions which they would classify as not yet 'investor ready'. This can have many reasons, one of which is the presumed risk. Many entrepreneurs or management teams fail to recognize the risks that are involved (De Meza & Southey, 1996; Hmieleski & Baron, 2009). However, venture capitalist look for the balance between risk and reward (I. MacMillan et al., 1986).

Investor readiness can be explained as the moment when a start-up is ready to attract an equity investment. Douglas and Shepherd (2002) took an important first step in making this concept more understandable. In their research is stated that investor readiness is decomposed into three sub components namely: technology readiness, market readiness and management readiness. These three sub components are based on the ignorance for consumers, producers and managers. These three points of ignorance are the reasons, all other things being equal, that the mortality rate of new ventures is higher compared to established ventures (Shepherd, Douglas, & Shanley, 2000). In their research investor readiness was measured using a series of questions covering the three sub components. While this was a good first step with regards to the technology and market readiness, it does not go far enough with regards to the measurability of the management readiness. This is because the management readiness is not measurable but rely on the gut-feeling of the venture capitalist.

A lot of research has mentioned the entrepreneur and or management as the key component in a start-up (Carter & Van Auken, 1994; Muzyka, Birley, & Leleux, 1996). Nonetheless, little is known about what traits the entrepreneur or management team should possess according to the venture capitalists. In the series of questions form Douglas and Shepherd (2002), the questions rely the investors gut feeling (Khan, 1987), regarding the three sub areas. Because of this it does not truly measure the investor readiness, especially concerning the management readiness. This is because there is no standard for investor readiness and the three sub areas, meaning there is no point of reference. For the technology and market readiness tools can be used in order to identify at which stage either the technology or market is. A venture capitalist can indicate from what stage a start-up is considered investor ready from their point of view. These models can be used to speak the 'same or common language'. Douglas and Shepherd (2002) conclude in their research that entrepreneurs rate their start-up higher concerning the investor readiness compared to the venture capitalists. If there is consensus with regards to what is investor readiness, it could potentially lead to better investment proposals. As stated, for technology and market there are tools which can provide a common language. However, for the management readiness there is no 'common language' at this moment. Although there is agreement that the entrepreneur or management team is of utmost importance, there is no agreement what traits the entrepreneur or management team should have.

*This leads to the following research question and sub questions:*

*What elements determine investor readiness and how can the measurability increase in order to provide an improved investment decision and create a better understanding between venture capitalist and start-up?*

*Sub questions:*

1. On what factors are start-ups rated by venture capitalists?
2. How can investor readiness be determined?
3. Are there differences in investor readiness among different phases in the start-up lifecycle?

These questions are important in order to gain a deeper knowledge with regards to the concept of investor readiness. Furthermore, by increasing the measurability of investment readiness the investment decision can be based more on results and facts and less on the gut-feeling of the venture capitalists. This could lead to a more grounded investment decision.

This research proceeds as follows; it will first provide an overview of relevant literature concerning selection and rejection criteria of venture capital, investor readiness and management types or personality traits per life cycle phase of the start-up which are important or can aid in the



development of the start-up. Second, a case study will be undertaken in order to gain a better understanding of the venture capital investment process and what important points are in this process. Third, data will be collect, analysed and compared to the findings from the literature with regards to the selection and rejection criteria and management readiness. Finally, this research will work towards creating a starting point with regards to increasing the measurability for investor readiness, which can be understandable for both the start-up and venture capitalist in order to provide a 'common language'. Furthermore, by increasing the measurability it can help with making a more calculated investment decision.

## 2. Literature Review

In order to answer the research questions above, the literature review is structured as follows: first an overview of the venture capital industry will be provided in order to set the scene. Second, the criteria on which venture capitalists select or reject investment propositions will be reviewed. Third, the past findings regarding investor readiness will be reviewed. During this review of investor readiness, the different sub areas of the topic will also be reviewed. In the literature, possible measurement scales or models will be reviewed in order to determine the investor readiness without using the investor's gut-feeling. Furthermore, an exploratory review will be done in order to determine whether evidence can be found for investor readiness per phase.

### 2.1 Venture Capital industry

In most start-ups with an innovative idea, technology, product or extraordinary know-how and skill-set, capital is needed in order to start and scale their businesses (P. P. A. Gompers & Lerner, 2004). For this group of start-ups there are various sources in order to gain capital. One of these sources is venture capital. The reason why a large group of start-ups starts on a journey for venture capital is to finance their negative operational cash flow in exchange for ownership in the venture, in other words an equity investment (P. Gompers & Lerner, 2001) (M. Brettel 2013.).

Venture capitalists have an important role in the development of usually early-stage, high-potential, high risk and growth start-up companies by financing and thus facilitating their rapid growth and expansion. Venture capitalists bring many advantages to a venture. For example; a venture capitalist does not ask for collaterals, which helps high-tech start-ups, without many tangible assets, to get finance. Their dividends can be paid flexibly; in match with company cash flows and their network provides useful services for the company. Nevertheless, there are also disadvantages when using venture capital. The most important disadvantage is the decrease of wealth of the owners. Furthermore, the managers do not have full control, because venture capitalists monitor the business and the strategic decisions closely and on occasion steer the start-up in a certain direction (H. Chugha, 2011).

In Europe, the different active venture capitalists made investments totalling €3,2bn in 2.923 different companies in 2013 (EVCA, 2013). In Europe, there were 556 venture capital firms situated and active. In the Netherlands Venture Capital firms invested €153,1m in 185 companies (NVP, 2013). In the Netherlands there are 67 venture capital firms registered with the Nederlandse Vereniging voor Participatiemaatschappijen (NVP) or in English Dutch Association of Venture Capital firms. PPM Oost has been the most active venture capital investor for three years in a row (AgentschapNL, 2012), meaning it will have a large pool of data to be used in this research.

Venture capitalists have a different approach in making investment decisions compared to for example a bank. This is due to the fact that bank finance and venture capital are based on different risk profiles (Ueda, 2004). Venture capitalists require relatively little collateral and accept high risk due to the possible higher reward (Zider, 1998). Banks usually take less risk but their reward is potentially lower due to not having an equity stake (Keuschnigg & Nielsen, 2003). Because of this fundamental difference the investment or financing decision differs (Colombo & Grilli, 2007; De Bettignies & Brander, 2007; Fiet & Fraser, 1994).

## 2.2 Selection Criteria

Venture capitalists use a wide variety of selection criteria. The selection criteria venture capitalists use have been a topic which has attracted the attention of many researchers. A wide variety of literature researches as well as case studies have been done. These selection criteria are very important for venture capitalists due to the high number of start-ups not surviving. A study done by Audretsch, Houweling, and Thurik (2000) about start-up survival in the Netherlands indicated that 16% of the start-up in their sample of 2017 start-ups did not make it past their second year and 66% did not make it to their tenth year. Similar findings were found by Manigart, Baeyens, and Van Hyfte (2002) in Belgium who did a study into venture capital backed and non venture capital backed companies and firm survival. Because of this high number of start-ups who do not make it the start-ups who do become a success need to cover the losses of those who did not survive.

Most venture capitalists base their decision on a business plan provided by a start-up. Because of this, it is an important step for a start-up to write a clear business plan (Barrow, 2001). Kuratko and Hodgetts suggest that 'the business plan is the minimum document required by any financial source' (Kuratko, 2001, p. 285). These business plans and the entrepreneurs are rated on many different selection criteria. Frequently mentioned criteria in literature are; the revenue model, scalable technology and the management team or the entrepreneur (G. a. W. Boocock, M., 1997; J. H. Hall, C.W., 1993; I. C. MacMillan, Zemann, L., & Subba Narasimha, P. N., 1987; Mensink, 2010; Sudek, 2006; Tyebjee & Bruno, 1984).

Most of the researches on the topic of selection criteria divide the criteria into sublevels. I. MacMillan et al. (1986) divided the selection criteria into the following sublevels: the entrepreneur's personality, the entrepreneur's experience, characteristics of the product or service, characteristics of the market and financial considerations. Hatton and Moorehead (1997) used the same sublevels, however; an additional level was added, the environmental threats. Hudson (2005) did a literature

review into selection or evaluation criteria. In this research an overview was created which can be seen in table 1.

An interesting fact is that the criteria did not change over a time span of 1984 till 2012. The importance of some of the criteria however did shift. A possible explanation for these changes can be a different economic climate. Capital is more scarce in today's market which can explain why venture capitalists take less risk compared to a few years ago (Joern Block & Sandner, 2009; OECD, 2009).

Criteria that remained important in almost all reviewed research were the entrepreneur and or management team, the market characteristics and the technology or product. The entrepreneur and management team appeared as one of the most important criteria considering it being named in almost all researches. For example MacMillan et al. (1985, p. 128) mention that; "the quality of the entrepreneur ultimately determines the funding decision". This finding was confirmed by Carter and Van Auken (1994) , Muzyka et al. (1996) and Sudek (2006). The reason behind the entrepreneur or management team being important during the investment decision is due to the fact that in start-ups venture capitalists invest in the entrepreneur or team which have an idea or new technology which they want to expend worldwide.

Evaluation criteria	Wells (1974)	Piondexter (1974)	Tyebee & Bruno (1984)	MacMillan et al. (1985)	MaxMillan et al. (1987)	Robinson (1987)	Timmons et al. (1987)	Hall & Hofer (1993)
<b>Characteristics of the entrepreneur</b>								
Management skills and experience	x	x	x	X	X	x	X	X
Venture team				X	X	X		X
Management stake in the firm		x	x					
Personal motivation	X					X		
Entrepreneurs personality				X				
<b>Product/Service characteristics</b>								
Product attributes	X		X	x	X			
Product differentiation			X				X	
Proprietary	X			X	X			
Growth potential			X					
Market acceptance				X			X	
Prototype				X				
<b>Market characteristics</b>								
Market size	X		X				X	x
Market growth	X		X	X	X	X	X	
Barriers to entry			X				X	
Competitive threat				X	X		X	
Venture creates new markets				X				
<b>Financial characteristics</b>								
Cash-out method	X		X					x
Expected ROI		X	X	X			x	
Expected risk		X						
Percentage of equity		X						
Investors provisions		X						
Size of investment	X	X						
Liquidity				X	X	X		
<b>Other</b>								
References	X					X		
Venture investment stage	x	X	x					
Venture capitalist criteria								x

table 1 Comparison of venture capital evaluation criteria (reprinted from Hudson (2005))

Franke, Gruber, Harhoff, and Henkel (2008), did a literature review with regards to the selection criteria of venture. This research provide a clear table from literature ranging from 1974 till 1999. The criteria for a start-up can be reviewed in table 2.

Author	Sample	Method	Evaluation criteria by rank order of importance
Wells (1974)	8 venture capitalists	Personal interview	<ul style="list-style-type: none"> <li>• Management commitment</li> <li>• Product</li> <li>• Market</li> </ul>
Poindexter (1976)	97 venture capitalists	Mail survey	<ul style="list-style-type: none"> <li>• Quality of management</li> <li>• Expected rate of return</li> <li>• Expected risk</li> </ul>
Johnson (1979)	49 venture capitalists	Mail survey	<ul style="list-style-type: none"> <li>• Management</li> <li>• Policy/strategy</li> <li>• Financial criteria</li> </ul>
Tyebjee and Bruno (1981)	46 venture capitalists	Phone interview	<ul style="list-style-type: none"> <li>• Management skills and history</li> <li>• Market size/growth</li> <li>• Rate of return</li> </ul>
MacMillan et al. (1985)	102 venture capitalists	Mail survey	<ul style="list-style-type: none"> <li>• Capability for sustained intense effort</li> <li>• Familiarity with the target market</li> <li>• Expected rate of return</li> </ul>
Goslin and Barge (1986)	30 venture capitalists	Mail survey	<ul style="list-style-type: none"> <li>• Management experience</li> <li>• Marketing experience</li> <li>• Complementary skills in team</li> </ul>
Robinson (1987)	53 venture capitalists	Mail survey	<ul style="list-style-type: none"> <li>• Personal motivation</li> <li>• Organizational/managerial skills</li> <li>• Executive/managerial experience</li> </ul>
Rea (1989)	18 venture capitalists	Mail survey	<ul style="list-style-type: none"> <li>• Market</li> <li>• Product</li> <li>• Team credibility</li> </ul>
Dixon (1991)	30 venture capitalists	Personal interview	<ul style="list-style-type: none"> <li>• Managerial experience in the sector</li> <li>• Market sector</li> <li>• Marketing skills of management team</li> </ul>
Muzyka et al. (1996)	73 venture capitalists	Personal standardized interview	<ul style="list-style-type: none"> <li>• Leadership potential of lead entrepreneur</li> <li>• Leadership potential of management tea,</li> <li>• Recognized industry expertise in team</li> </ul>
Bachher and Guild (1996)	40 venture capitalists	Personal interview	<ul style="list-style-type: none"> <li>• General characteristics of the entrepreneur</li> <li>• Target market</li> <li>• Offering (product/service)</li> </ul>
Shrader, steier, McDougall and Oviatt (1997)	214 new ventures with initial public offering	Interviews, publicly available documents	<ul style="list-style-type: none"> <li>• Technical education</li> <li>• New venture experience</li> <li>• Focus strategy</li> </ul>
Shepherd (1999)	66 venture capitalists	Conjoint experiment (personal/mail)	<ul style="list-style-type: none"> <li>• Industry-related competence</li> <li>• Educational capability</li> <li>• Competitive Rivalry</li> </ul>

Table 2 Survey of the literature (reprinted from Hudson (2005))

The criteria found in the literature will be used in order to have a better understanding of venture capital and the criteria on which venture capitalists base their decision. The financial considerations will not be taken into account, due to the fact that an investor will not invest if the financial considerations are not favourable. Furthermore, for start-ups there is very little known regarding the future prospects in terms of revenue and costs. These are based on a best estimate. This makes it difficult to measure what the reasons are for accepting an investment proposition in view of the

financial considerations. Overall, these selection criteria help increasing the understanding of why certain start-ups are considered investor ready and others are not.

## 2.3 Rejection Criteria

Besides selection criteria, rejection criteria have also been a topic which has spoken to the interest of researches (Feeney, Haines Jr, & Riding, 1999; Fried & Hisrich, 1994; J. Hall & Hofer, 1993). These rejection criteria can be a valuable source of information for start-ups in their journey for venture capital. For example I. MacMillan et al. (1986) interviewed fourteen venture capitalists in New York and identified criteria in which they evaluated proposals. In this research they provided a list which linked two selection criteria and measured if these two criteria were missing what percentage of the venture capitalists would reject the proposal. Findings of this research were: if and when an entrepreneur had little staying power and did not show the potential for delivering a multiple of ten, 84% of the venture capitalist would reject the proposal. An interesting fact is that in the top ten of criteria which would lead to a rejection, all ten had at least one criterion that concerned the entrepreneur or the management team. The conclusion made by I. MacMillan et al. (1986) from this is; "So entrepreneurs seeking funding who have any of these personality or experience flaws must realize that they are wasting their time unless they can assemble around them a team of people who can compensate for these flaws" (I. MacMillan et al., 1986, pp. 124-125). other findings were that 42% of the venture capitalists require a balanced team, 20% required one person with relevant experience, 9% required a team with relevant experience while just 28% found it non-essential .

G. Boocock and Woods (1997), did a study which was aimed at uncovering the selection process used by venture capitalists. Among their findings were rejection reasons for the applications by the venture capital fund. The findings of these rejection criteria are summarized in table 3 below, it provided data ranging from the initial screening, after the first face to face meeting and of the second meeting.

	Initial Screening	After 1st Meeting	Sub-Total	After 2nd Meeting	Grand Total
Incomplete plan	29%	1%	30%	1%	31%
Market characteristics	12%	0.5%	12.5%	0%	12.5%
No unique selling point	4%	0%	4%	0%	4%
Start-up finance	6%	1%	7%	0.5%	7.5%
Project size	7%	0.5%	7.5%	0.5%	8%
Management skills/experience	4%	1%	5%	1.5%	6.5%
Excessive risks	5%	0.5%	5.5%	1%	6.5%
Financial factors	2%	0%	2%	0%	2%
Application withdrawn	4%	1%	5%	5.9%	11%
Other reason	6%	2%	8%	2.5%	10.5%
Total	80%	7.5%	87.5%	12.5%	100%

Table 3 Reasons for Rejection of Proposals received (adopted from G. Boocock and Woods (1997))

From this table, can be concluded that the largest part of the applications were turned down in the initial screening phase. Important reasons for rejecting an application were unfavourable market characteristics, the financial situation, size of the project, the management and excessive risks. What is however unclear from this research, is the importance of each of these rejection reasons.

Further research into the field of reasons why investment opportunities were turned down was conducted by Mason and Harrison (1996b). This research investigated why start-ups were rejected by a business angel investment group. The analyses highlighted three dominant reasons for rejecting an investment opportunity: weaknesses in the entrepreneur/management team, marketing or market-related factors and financial considerations.

When summarizing the section above with regards to the rejection criteria used by venture capitalists, it can be stated that the reason why most investment propositions are turned down is the result of an incomplete business plan. However, this research is not focussing on what a business plan has to tackle in order to be considered complete. What is important for this research is the fact that investment propositions are also turned down frequently because of the market in which the start-ups operate, the management team and financial considerations.



## 2.4 Investor Readiness

A relatively new research field is that of investor readiness. Investor readiness is generally used in the context of start-ups raising capital. The term is used to indicate whether or not a start-up is ready to receive an equity investment. The biggest difficulty related to Investment Readiness for most Start-ups is transforming an idea or technology into a solid business or venture (Sorheim, 2001). A closely related problem to this is the fact that Start-ups often fail to identify solid business ideas which can be utilized with their technology. The problem is essentially the forming of solid business idea and communicating this idea to investors (Mason & Richard, 2003). A related problem might be that the management of the start-up itself is not ready for an equity investment. Equity aversion, means that an entrepreneur is not ready to sell shares of his or her company and thus give up part of the control (C. Mason & Kwok, 2010).

It can be stated that the ultimate level of investor readiness is reaching an initial public offering or IPO. This is because when a company reaches an IPO it has to handle its investor relations with the utmost care because it will directly influence its stock price. If a company cannot handle the in most cases difficult investor relations it is not investor ready (Bushee & Miller, 2005).

Investor readiness encompasses all aspects of the business that relate to an investor's perception of its 'investability', including management team skills, the clarity with which the opportunity is defined, the business model, route to market, governance arrangements and presentation (D. Shepherd, 1999; C. Mason & Kwok, 2010).

One of the core papers on this research area is that of Douglas and Shepherd (2002). In their research they examined the nature of investor readiness and the different perception of the entrepreneur and the venture capitalist, related to investor readiness. In this research, investor readiness is decomposed into three main sub-areas which have their own readiness and consist of many fields. These three levels are; technology readiness, market readiness and management readiness. These three areas measure the readiness of each individual level and give an indication to which degree the firm is ready for an equity investment. The conclusion of their research was that the perception of entrepreneurs and venture capitalists differs. The entrepreneurs rated their start-up significantly higher compared to the venture capitalists. This difference in perception is due to the optimism of most entrepreneurs which can bias their perception of their investor readiness (De Meza & Southey, 1996; Hmieleski & Baron, 2009; Landier & Thesmar, 2003). The three levels which decompose investor readiness fit the selection and rejection criteria found in the two sections above. Douglas and Shepherd (2002) designed a model, which was a series of questions which could

measure the investor readiness in the three sub components, the questions used can be found in Appendix 7.1.

Looking back on the previous chapters, the most mentioned selection criteria categories were the management, the product/technology, the market and the financial considerations. The rejection criteria were the market characteristics and the management team. This strengthens the proposition of Douglas and Shepherd (2002) that technology readiness, market readiness and management readiness indicate whether a start-up can be considered investment ready or in other words, these three sublevels give an indication regarding the investment readiness of a start-up. For this reason this research will focus on technology readiness, market readiness and management readiness and thus investor readiness. The three sublevels of investor readiness will be described in the following sections.

### 2.4.1 Technology Readiness

Technology readiness, indicates at what stage of development a technology currently is. Douglas and Shepherd (2002) tested this readiness level on the following elements; intellectual property development, innovation level, patent, prototype and adaptations needed for mass-production. Many of these elements can be found in the research of Mankins (1995). An overview of the development of a new technology was provided by Mankins (1995); (Mankins, 2009). In this overview, nine development phases were designed for the development of a space shuttle of the National Aeronautics and Space Administration (NASA). An overview of these nine development phases are given in figure 1 below. These levels or phases were named the Technology Readiness Levels or TRL.

System test, launch & operation	TRL 9	Actual system "Flight proven" through successful mission operations
System/subsystem development	TRL 8	Actual system completed and "Flight qualified" through test and demonstration (ground or space)
	TRL 7	System prototype demonstration in a space environment
Technology demonstration	TRL 6	System/subsystem model or prototype demonstration in a relevant environment (ground or space)
	TRL 5	Component and/or breadboard validation in relevant environment
Technology development	TRL 4	Component and/or breadboard validation in laboratory environment
	TRL 3	Analytical & experimental critical function and/or characteristic proof-of-concept
Research to prove feasibility	TRL 2	Technology concept and/or application formulated
	TRL 1	Basic principles observed and reported
basic technology research		

Figure 1 Technology readiness levels (reprinted from NASA, from <http://as.nasa.gov/aboutus/trl-introduction.html>)

Reviewing these nine levels of technology readiness, most if not all new technological or product developments could be placed or ranked with this tool. The tool starts with the basic principle or idea phase and ends with flight proven or in other words accepted technology or product.

Technology readiness levels have been used in multiple researches in order to indicate the maturity of a certain technology or product. Graettinger, Garcia, Sivi, Schenk, and Van Syckle (2002) conducted a study into methods of assessing the maturity of new technologies focussed on software used by the United States Army Tactical Wireless Network Assurance. This study consisted out of three main parts; using the TRLs in technology screening, developing or acquiring a TRL tool and implementing a TRL tool. In their research technology readiness levels were given with more precise description making it more precise and user-friendly in ranking a technology or product. These TRLs are given below. In this description the same levels as in the table from Mankins (1995) are stated, however, a more precise description of each level is provided.

*Technology readiness levels reprinted from Graettinger et al. (2002);*

1. Basic principles observed and reported:

Lowest level of technology readiness. Scientific research begins to be translated into applied research and development. Examples might include paper studies of a technology's basic properties.

2. Technology concept and/or application formulated:

Invention begins. Once basic principles are observed, practical applications can be invented. Applications are speculative and there may be no proof or detailed analysis to support the assumptions. Examples are limited to analytic studies.

3. Analytical and experimental critical function and/or characteristic proof of concept:

Active research and development is initiated. This includes analytical studies and laboratory studies to physically validate analytical predictions of separate elements of the technology. Examples include components that are not yet integrated or representative.

4. Component and/or breadboard validation in laboratory environment:

Basic technological components are integrated to establish that they will work together. This is relatively "low fidelity" compared to the eventual system. Examples include integration of "ad hoc" hardware in the laboratory.

5. Component and/or breadboard validation in relevant environment:

Fidelity of breadboard technology increases significantly. The basic technological components are integrated with reasonably realistic supporting elements so it can be tested in a simulated environment. Examples include "high-fidelity" laboratory integration of components.

6. System/subsystem model or prototype demonstration in a relevant environment:

Representative model or prototype system, which is well beyond that of TRL 5, is tested in a relevant environment. Represents a major step up in a technology's demonstrated readiness. Examples include testing a prototype in a high-fidelity laboratory environment or in a simulated operational environment.

7. System prototype demonstration in an operational environment:

Prototype near, or at, planned operational system. Represents a major step up from TRL 6, requiring demonstration of an actual system prototype in an operational environment such as an aircraft, vehicle, or space. Examples include testing the prototype in a test bed aircraft.

8. Actual system completed and qualified through test and demonstration:

Technology has been proven to work in its final form and under expected conditions. In almost all cases, this TRL represents the end of true system development. Examples include developmental test and evaluation of the system in its intended weapon system to determine if it meets design specifications.

9. Actual system proven through successful mission operations:

Actual application of the technology in its final form and under mission conditions, such as those encountered in operational test and evaluation. Examples include using the system under operational mission conditions.

A possible tool, which can also measure the readiness of technology is the Technology Readiness Index or TRI by Parasuraman (2000). Lin et al. described this model as a tool "to measure people's general beliefs about technology. TR construct comprises four sub-dimensions: optimism,

innovativeness, discomfort, and insecurity. Optimism relates to a positive view of technology and a belief that technology offers people increased control, flexibility, and efficiency” (Lin et al., 2007, p. 643). A difference regarding the TRL, is the fact that the TRI measures the people’s general belief in a certain technology. While this gives an overview of the market position of a technology it does not give an indication about the technology itself with regards to its development phase.

In this research, the technology readiness levels will be used in order to measure the readiness of a technology or product due to the flexibility of the levels and the proven practical relevance (Graettinger et al., 2002). Furthermore, the TRL provides a clear overview of the developmental phases which especially technical start-ups can relate to their development. This model can increase the measurability and can aid in developing a common language between start-ups and venture capitalists due to its user-friendliness. For these reasons, the TRL will be used in this research in order to determine whether the measurability of investor readiness can be increased.

2.4.2 Market Readiness

Market readiness is the second category of which investor readiness consists. The concept of market readiness measures the readiness of a market for a certain technology or product. Nonetheless, market readiness is a broad concept in which many researchers are active. Douglas and Shepherd (2002) tested the market readiness of a venture via a series of questions which tested the following main topics; market demand, market research, beneficial public relations, amount of product redesign and/or refinement, actual sales, cost of launching the new product, consideration of customers for purchase and whether or not a marketing plan is present. From these points the readiness of the market could be measured. Furthermore, the stage of the start-up could be measured with the questions relating to the redesign and refinement of the product after customer feedback and whether actual sales had been realized. In this research market readiness will indicate the readiness for the market and the development phase of the start-up.

Aasrud, Baron, and Karousakis (2010) did a study into the market readiness of peoples acceptance for climate change control. In their research phases were described which can be found in table 4.

Phase Market Readiness	
1	Assessing mitigation potential and instruments
2	Feasibility assessment and choice of market based approaches
3	Setting up the technical framework
4	Aligning policy and legal/institutional framework

5 Piloting, testing and reviewing

Table 4 Phase of Market Readiness (adopted from Aasrud et al. (2010))

In the research of Aasrud et al. (2010) is indicated that the five phases do not necessarily follow in a sequence. This is due to the fact that several phases and actions belonging to a specific phase can take place parallel. Aasrud et al. (2010, p. 39) wrote; "following a piloting and testing phase there may be a need to redesign certain elements of the market mechanism". The time and resources may also vary substantially which are needed for each phase.

A further possible concept, which can be used to measure market readiness is the product life cycle and the innovation adoption and diffusion model. The product life cycle was first mentioned by Joel Dean (1950) when describing pricing policies for new products. The product life cycle consists out of five phases out of which four are important for this. The declining phase is less important in this research due to the fact that start-up usually do not have a product or technology which is in the declining phase. This is because most start-up are innovation driven and thus are in the beginning of the cycle.

Vernon (1966), conducted a study about the product cycle or product life cycle. In this research he did an investigation into international investment and trade linked to the product cycle. Vernon (1979, p. 255) mentioned the product cycle once again in a later research, this time describing the cycle as " the fact that new products constantly appear, then mature, and eventually die". This description matches the description of the five phases according to Gherasim (2011); Rink and Swan (1979) which are shortly defined by their key characteristics in table 5 below form the research of Gherasim.

Product life cycle	Important elements of the product life cycle phase specific (Gherasim, 2011)
Development	<ul style="list-style-type: none"> <li>• Development phase</li> <li>• No (real) market demand</li> </ul>
Introduction or Launch	<ul style="list-style-type: none"> <li>• Market preparations; right time and place</li> <li>• Launch</li> <li>• Show potential</li> <li>• Profit curve abscissa axis</li> <li>• Technical complex problems</li> <li>• Acceptation phase of technology/product</li> <li>• High promotion</li> </ul>

Growth	<ul style="list-style-type: none"> <li>• Market penetration</li> <li>• First buyers or repeated sales</li> <li>• Diffusion of product/technology</li> <li>• Competition</li> <li>• Promotion should fit strategy</li> <li>• Increased sales volume</li> <li>• Choice of; increasing market share or profit growth</li> </ul>
Maturity	<ul style="list-style-type: none"> <li>• Mature product/technology</li> <li>• Difficult phase for positioning</li> <li>• Slowdown of growth</li> <li>• Turnover reaches its maximum</li> <li>• Product improvements or diversified</li> <li>• Increased promotion due to slowdown</li> <li>• Declining price</li> <li>• Strong competition</li> </ul>
Decline	<ul style="list-style-type: none"> <li>• Decreasing sales</li> <li>• New technical superior products</li> <li>• Cheaper products</li> <li>• Commercial death of product/technology</li> <li>• Abandoning product/technology</li> </ul>

Table 5 key characteristics of the product life cycle

A model which can also be used in order to determine the market readiness is the innovation adoption cycle. Rogers (1995) describes the diffusion of new ideas as a process which consists of four elements; innovation, communication channels, time, and the social system. The adopters of the innovation are subdivided into five categories; innovators, early adopters, early majority, late majority, and laggards. These subcategories are based on their level of innovativeness. It is based on the percentage of people accepting or adopting a technology. This categorization is based on the percentage of individuals under each portion of the normal curve, marked off by standard deviations from the mean as shown in figure 2 below (Rogers, 2002). The innovation adoption cycle can provide a good indication of the readiness of the market for a certain technology or product. If a product or technology is in the first phase the market readiness is low, innovators will buy the product but the majority of the market is not ready to buy it yet. This part of the market will need to be convinced it is a sound and proper product or technology. When it reaches the majority phase the company can rapidly expand its market share because the product or technology is widely accepted.

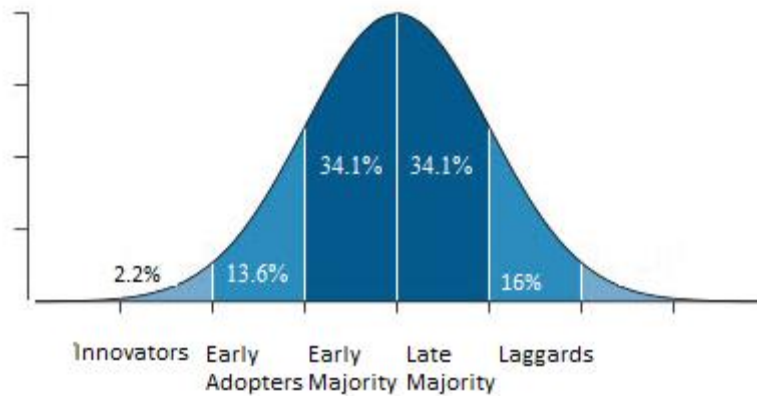


Figure 2 Innovation adoption curve (adopted from Rogers (2002))

These two models can be used in order to determine whether a certain market is 'ready' or whether it still needs to be developed. In short, the first concept is the product life cycle in order to determine whether it is a completely new product or an improvement on an already existing one; in other words is it a radical or incremental innovation (Duhovnik, 2009; Grossman & Helpman, 1989; Klepper, 1996; Vernon, 1966, 1979). The product life cycle can be used to assess the lifespan of a product or innovation and the stage a product and thus the market it is currently in. The second concept, is that of the innovation adoption and diffusion. The concept or model can show in which phase of the innovation adoption and diffusion cycle the product or technology is located (Jeyaraj, Rottman, & Lacity, 2006; Rogers, 2010; Tornatzky & Klein, 1982). With the innovation adoption model it is possible to identify whether it is a widely accepted technology or a completely new one. With these two concepts which both use a normal curve, an innovation can be classified regarding it being a radical innovation or an incremental innovation and in what phase of acceptance it is. At which section in the normal curve the start-up is placed will give a clear indication with regards to the market readiness. Because both concepts have clear characteristics per phase the measurability and understandability of the overall investor readiness will increase.

### 2.4.3 Management Readiness

Management readiness indicates whether the management of a start-up is ready to attract an investment and to lead the start-up. Douglas and Shepherd (2002), tested the management readiness of a start-up in their research on the following points: business plan, reaction to feedback, composition of the team, motivation for starting a venture and the personality of the management team.



Ciavarella, Buchholtz, Riordan, Gatewood, and Stokes (2004) report in their study that personality traits of entrepreneurs influence the decision making of venture capitalists. This finding makes it important to understand what traits are considered important. Franke et al. (2008) identified factors which would contribute to a positive rating of venture capitalist regarding the start-up management team. These factors can be viewed in figure 3.

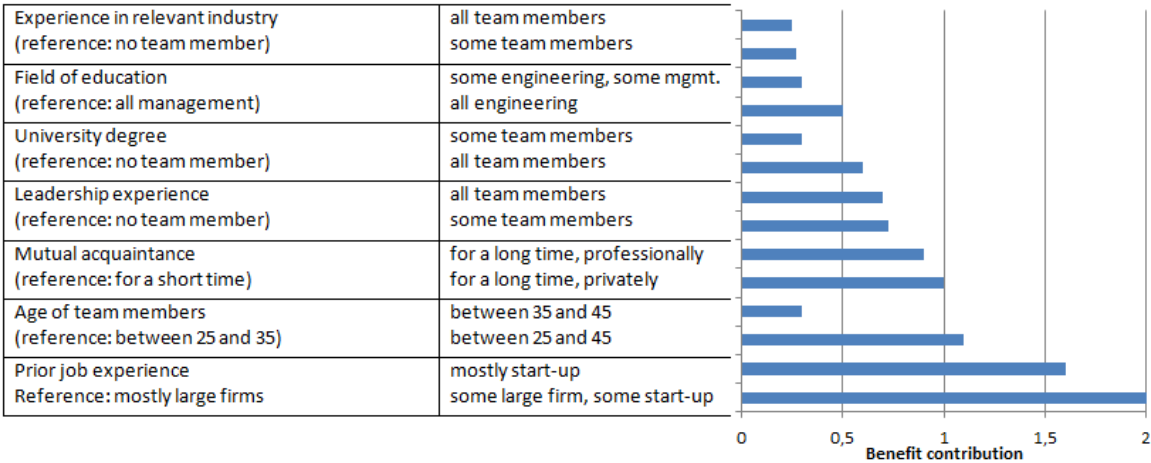


Figure 3 Benefit contributions of parameter values of team characteristics (reprinted from Franke et al. (2008))

In order to determine when and if the entrepreneur or management is well suited for the phase in which the start-up is regarding its development, a tool or measurement index needs to be found or formulated. The tool needs to be able to determine the traits which an entrepreneur or management team possesses. It does not have to be able to determine the characteristics such as the field of education or the profession of the parents. What it does need to do is determine the personality characteristics or traits of the entrepreneur or management team. With these personality characteristics the natural strength or preference of a person can be determined. These traits can afterwards be linked to the traits which are most important or needed in each phase of the start-up life cycle. With such a tool the optimal management for each start-up could potentially be determined.

A concept which can be used in order to assess the management of a venture are the archetypes of Carl Jung. Jung was one of the founders of analytical psychology and is best known for his theories of the Collective Unconscious, including the concept of archetypes. A possible option in order to test the management readiness of a venture is the Odin Development Compass or ODC. This is a tool created by the ODIN institute (de Jager & Doeze Jager, 2014). This tool is based on the archetypes drivers of Carl Jung (Jung, 1981). The ODC tool accesses the preferred unconscious archetypal drivers of a person. Furthermore, it uncovers their shadow-opposites (natural resentment) and shows the

impact of past and present experience on personal unconscious and conscious drivers. The ODC measures the natural and fragile strength and the natural potential of a person, team or organization. The ODC tool also relates the different drivers and shows the dynamic interaction between the different elements. With this tool it is possible to classify what type of person the entrepreneur is or from what types of persons the management team consists. These personality types and traits can be linked to the start-up and its developmental phase in order to identify the managements fit with the start-up.

The eight archetypes drivers used in the ODC are mentioned in table 7, with their characteristics and their natural strengths and shadow sides (de Jager & Doeze Jager, 2014). The points mentioned in the natural strength side can be achieved when a person operates in his or her natural strength area. The shadow side can occur when a person acts in an area which is not his or her natural strength but is in a fragile strength area. When in stress a fragile strength becomes difficult to manage and in the worst case it can become a weakness. When a fragile strength becomes a weakness one of the traits mentioned in table 7 under the shadow side can occur.

Archetype drivers	Natural Strength	Shadow Side
The King	<ul style="list-style-type: none"> <li>• Accountability</li> <li>• Confident</li> <li>• Leadership</li> <li>• Charisma</li> </ul>	<ul style="list-style-type: none"> <li>• Immature</li> <li>• Dominant</li> <li>• Egoism</li> <li>• Self-assertion</li> </ul>
The Achiever	<ul style="list-style-type: none"> <li>• Pragmatism</li> <li>• Binding</li> <li>• Value</li> <li>• Perseverance</li> </ul>	<ul style="list-style-type: none"> <li>• Dogmatic</li> <li>• Stubborn</li> <li>• Unbending</li> <li>• Greedy</li> </ul>
The Analyst	<ul style="list-style-type: none"> <li>• Analytical</li> <li>• Constructivism</li> <li>• Restrictive</li> <li>• Drive</li> </ul>	<ul style="list-style-type: none"> <li>• Controlling</li> <li>• Anxiety</li> <li>• Calculating</li> <li>• Perfectionistic</li> </ul>
The Messenger	<ul style="list-style-type: none"> <li>• Interaction</li> <li>• Put in motion</li> <li>• Communication</li> <li>• Commerce</li> </ul>	<ul style="list-style-type: none"> <li>• Superficial</li> <li>• Attention seeking</li> <li>• Absent minded</li> <li>• Avoiding contact</li> </ul>
The Innovator	<ul style="list-style-type: none"> <li>• Conceptual</li> <li>• Progressive</li> <li>• Social constructivism</li> <li>• Out of the box</li> </ul>	<ul style="list-style-type: none"> <li>• Rebellious</li> <li>• Own freedom</li> <li>• Slippery</li> <li>• Fickle</li> </ul>
The Receptive	<ul style="list-style-type: none"> <li>• Unlimited</li> <li>• Considerate</li> <li>• Reflective</li> <li>• Empathic</li> </ul>	<ul style="list-style-type: none"> <li>• Sacrificially</li> <li>• Feel guilty</li> <li>• Weak</li> <li>• Intrusive</li> </ul>

The Strategist	<ul style="list-style-type: none"> <li>• Strategic</li> <li>• Strength</li> <li>• Resolute</li> <li>• Transformation</li> </ul>	<ul style="list-style-type: none"> <li>• Lust for power</li> <li>• Might</li> <li>• Destructive</li> <li>• Manipulative</li> </ul>
The Visionary	<ul style="list-style-type: none"> <li>• Vision</li> <li>• Overview</li> <li>• Conviction</li> <li>• Ambition</li> </ul>	<ul style="list-style-type: none"> <li>• Distancing</li> <li>• Flight</li> <li>• Idealization</li> <li>• Arrogance</li> </ul>

Table 7 Overview of the traits per archetype driver

A method which could potentially also be used in order to test the management readiness is the big five personality test. The big five personality test consists of five personality factors which are given below (Barrick & Mount, 1991; Digman, 1990; Lokhande & Dongre, 2013; Poropat, 2009; Weisberg, DeYoung, & Hirsh, 2011);

- Openness to experience: curious and cautious
- Conscientiousness: organized and careless
- Extraversion: energetic and solitary/reserved
- Agreeableness: friendly/compassionate and analytical/detached
- Neuroticism: nervous and confident

The five factors described above with their underlying characteristics provide a rich conceptual framework for personality psychology. Even though the Big Five is a test which has had much attention there has been a lot of critique. J Block (1995) argued that there are limitations to the scope of Big Five. This is due to the fact that the Big Five does not explain all elements of a person's personality. This makes it unsuitable as an explanatory or predictive theory for the actions of a person (Paunonen & Jackson, 2000). Eysenck (1992) even argues that the five factor solution or personality factors can depend on the interpretation of the researcher and that more factors are possible. Nonetheless, the big five personality test has been a tool often used by researchers. However, because the test is not well suited for predicting behaviour and is not focussed on explaining specific personality traits it cannot be used in this research in order to test the management readiness. This is because, in this research management readiness is the link between the personality traits of the entrepreneur or management team and the traits which are important for the development of a start-up according to the literature and the analysed data. For this reasons the big five personality test will not be used in this research.

The ODC test from the Odin Institute is able to identify specific personality traits and strengths and fragile zones. For these reasons the ODC test will be used in this research. This is because in order to determine the management readiness the behaviour of the entrepreneur and or management team

needs to be predicted or at least be possible to assess whether they possess the required personality traits for the development phase in which their start-up is at the moment and the challenges which will lay ahead. For those reasons the archetypes of Jung and the test of Odin will be used because of their predictive power. In short, the ODC test from the Odin Institute is able to identify specific personality traits which help increase the measurability of the management.

#### 2.4.4 Linking the management with the venture

In the following section, the link between what type personality traits are best suited for which phase of the company life cycle will be made. This will be done because when the entrepreneur or the management team has been tested with the ODC test, it is important to have a baseline with which the results can be compared. This baseline will be made using previous literature.

There has been a lot of research into the functioning of management team/entrepreneurs and their influence on start-up or venture performance. The first research in this topic was aimed at the entrepreneur or director. This was based on the idea of the one true entrepreneur which will lead a company to success (Hornaday & Aboud, 1971). However, Ensley, Pearson, and Amason (2002, p. 365) mention that “ Despite popular legends about individual entrepreneurs, the creation and successful management of new ventures is often a team effort, shared among individuals representing a diversity of skills and experiences”. Especially the diversity of skills and experiences is an important item to consider due to a number of start-ups being created by friends or people who used to work together, studies have shown that the cohesion of the team has an influence on the performance (Keller, 1986; Mullen & Copper, 1994). Multiple studies have shown that the human capital element or in other words the team and not necessary its cohesion is the most important determinant of the start-up performance (Huselid, Jackson, & Schuler, 1997; Pennings, Lee, & Van Witteloostuijn, 1998; Thakur, 1999). There are researchers who delved into the subject of the successful firm or entrepreneur. Duchesneau and Gartner (1990) did a study into the characteristics of the lead entrepreneur, the start-up process and the firms behaviour. The result of their research were characteristics with regards to the entrepreneur such as whether or not the parents were entrepreneurs. Even though, it is interesting to note that there can be made a difference with regards to successful and unsuccessful entrepreneurs, it is difficult to use these characteristics in order to test the investment readiness because characteristics are mentioned and not personality traits. This means the predictive power is low.

A study area that is closely linked, is the research area of the influence the management team composition has on the amount of equity raised (Lester, Certo, Dalton, Dalton, & Cannella, 2006;

Zimmerman, 2008). According to Zimmerman (2008) management team heterogeneity has a positive effect of the amount of capital raised. In this research heterogeneity was viewed as a positive point, it was a sign that the firm was a good investment opportunity. However, it has proven to be very difficult to provide statistically relevant personality characteristics that will ensure a better performance of a start-up (Clarysse & Moray, 2004; Roure & Keeley, 1990). Clarysse and Moray (2004) also point to the fact that the founders are usually not the best managers in the long run.

A study done by Miner (1997), indicated four typologies or personality types of entrepreneurs namely; personal achievers, real managers, expert idea generators, and empathic super salespeople. Their finding was that personality patterns or characteristics of entrepreneurs have influence on the success rate of start-ups. However, each type of personality has his or her own strengths which are shortly described below:

- Personal achievers; Investing a lot of time and energy, dealing with crisis and trying to be good at everything by wearing many hats.
- Real managers; Manage the business into growth, being the general manager and having a team around them.
- Expert idea generators; invent new products and technologies, finding niches to operate.
- Empathic super salespeople; these people are best suited to sell their products and have other people for the other tasks needed.

Kamm and Nurick (1993) developed a model which represents the type of decisions that are expected to be made by individuals and groups when the start-up and team is build. In their model two stage were identified, the idea stage and the implementation stage. Furthermore, important steps were identified for each stage. Steps include, decisions regarding following the business opportunity to resource supply decisions and partnering decisions. It is also mentioned that on some occasions team members need to be replaced in order to increase the teams functional ability.

The true questions arise when the management has been tested. What is known, how to use this information, how to measure the management readiness. A study which focussed on specific personality traits per phase has been conducted by van Wijk and van Huuksloot (1998) for the Dutch company GTP. In this module, van Wijk and van Huuksloot (1998) identified five phases which can also be found in the literature, some equal and some slightly different (Clarysse & Moray, 2004; Gabrielsson & Gabrielsson, 2013; Kazanjian & Drazin, 1989; Massey et al., 2006). Levie and Lichtenstein (2010), did a literature review on this topic and found multiple stages of the company

life cycle in the literature, but the stages covered the same topics. In this research the following stages will be used as the company life cycle:

- Pre-start phase
- Pioneering phase
- Growth phase
- Realization phase
- Transformation phase

For each of these five phase there are important areas of attention for the management in order to guide the venture to the next phase. These areas of attention can be found in research done by Kazanjian (1988); Smith, Mitchell, and Summer (1985) and Kazanjian and Drazin (1989).

- Pre-start phase main activity; thinking
  - Developing a technology/product
  - Writing a business plan
  - Obtaining capital
  - Building a venture
- Pioneering phase main activity; doing
  - Commercializing technology/product
  - Executing the business plan
  - Building the foundations of the venture
- Growth phase main activity; developing and expending
  - Obtaining growth capital
  - Building the organisational structure
  - Manage the team
  - Re-evaluating the market and the vision
- Realization phase main activity; realizing
  - Controlling the venture
    - Rules
    - Procedures
    - Systems
  - Maintain growth momentum and market position
- Transformation phase main activity; remaining innovative
  - Restructuring of the venture
    - Aim for efficiency and effectiveness

- Aim on profit
- Focus again on innovation
  - Second generation technology/product

Each of these company life cycle phases have their own difficulties or can have their own crises. The crisis points mostly arise when a venture evolves from one phase to the next (Clarysse & Moray, 2004; Huang & Brown, 1999; Kazanjian, 1988; Scott & Bruce, 1987; Steinmetz, 1969) . When a venture evolves from the pre-start phase to the pioneering phase a reality crisis can occur. This crisis is caused by the fact that the plans of the entrepreneur will not match reality (Miller & Sardais, 2013). Nonetheless, these plans have to be executed. Costs can be higher, it can be difficult to attract talent, revenue is not as high as anticipated and decisions have to be made which have not been expected when writing the business plan (Hmieleski & Baron, 2009).

The next crisis occurs when the venture evolves from the pioneering phase to the growth phase. This crisis is called the delegate crisis due to the fact that the entrepreneur is not able any longer to do everything him- or herself and has to delegate certain tasks. This can be a difficult task for an entrepreneur resulting from fear, trust and the fact that he or she was accustomed of making all decisions (Willard, Krueger, & Feeser, 1992).

The following crisis that can occur is the controlling crisis, which can appear during the evolution of the growth phase to the realization phase. This crisis develops because the entrepreneur not evolving with the venture. The entrepreneur still wants to pioneer with new technology and products, is used to making decisions ad hoc , not used to delegating and is not used to procedures, rules and systems (Boeker & Karichalil, 2002; Rubenson & Gupta, 1992).

During the evolution from the realization to the transformation phase an innovation crisis can occur. This crisis can take place because the organisation is no longer focused on innovation but rather on efficiency and controllability (Barras, 1986; Sull & Houlder, 2006). The organisation misses opportunities due to it being not flexible enough to adept or quick enough to respond. This can be attributed to the organisation having learned certain procedures on how to cope with problems . A revitalization of culture, procedures and rules has to take place.

If and when the management team of a start-up is unable to change and thus cope with the external and internal factors which demand appropriate action there is a high chance that the management team will be replaced by venture capitalists (Boeker & Wiltbank, 2005). If the start-up in question does not have third parties, such as venture capitalists, who can make decisions there is a high chance of failure. An option which can be used in order to prepare the management team for the

next phase is by adding new members. These members can be employees showing potential, which are often given shares of the company in order to increase commitment (Iacobucci & Rosa, 2010).

Dvir, Sadeh, and Malach-Pines (2010) did a study into the fit or match between the personalities of entrepreneurs and their ventures and the link with business success. In their research a difference was made between high and low novelty ventures and the entrepreneurs leading these ventures were analysed. Dvir et al. (2010, p. 48) mention that “ Entrepreneurs in high novelty and high technological uncertainty ventures were found to love challenges significantly more and be significantly more committed, entrepreneurial, dreamers, creative, risk-taking, Intuitive, investigative, and more ambitious than entrepreneurs in low novelty and low technological uncertainty ventures”. In short, this means Dvir et al. (2010) were able to make a distinction between high and low novelty businesses and the entrepreneurs leading these ventures.

In the following section, the traits mentioned in the research of van Wijk and van Huuksloot (1998) for the GITP entrepreneurial guide per life cycle phase will be matched with the literature. In order to reduce these traits to the most important for each phase, these traits were matched with the traits presented in the literature. Furthermore, the traits will be aimed at preventing the crises which can occur during the growth of a start-up found in the literature. This has been done in order to set a baseline on which traits are important for an entrepreneur or management team per phase. The traits that found support in the literature are presented in table 8. Because the criteria in table 8, are mentioned in both the research of van Wijk and van Huuksloot (1998) and are also supported by other researches, it can be assumed these are important traits for an entrepreneur or management team to possess. In short this list is adopted from the research of van Wijk and van Huuksloot (1998) but adapted with the literature used in this section.

<i>Important personality traits per phase</i>	
<b>Phase</b>	<b>Personal characteristic</b>
Pre-start	<ul style="list-style-type: none"> <li>• Vision</li> <li>• Creativity</li> <li>• Judgement</li> <li>• Boldness</li> <li>• Ambition</li> </ul>
Pioneering	<ul style="list-style-type: none"> <li>• Initiative</li> <li>• Persuasiveness</li> <li>• Judgement</li> <li>• Vision</li> <li>• Decisiveness</li> <li>• Discipline</li> </ul>
Growth	<ul style="list-style-type: none"> <li>• Initiative</li> <li>• Independent</li> </ul>



	<ul style="list-style-type: none"> <li>• Customer orientated</li> <li>• Entrepreneurship</li> <li>• Discipline</li> <li>• Persuasiveness</li> <li>• Delegate</li> <li>• Ambition</li> <li>• Planning and organizing</li> <li>• Judgement</li> </ul>
Realization	<ul style="list-style-type: none"> <li>• Professionalism</li> <li>• Planning and organizing</li> <li>• Problem analysis</li> <li>• Delegating</li> <li>• Persuasiveness</li> <li>• Judgement</li> </ul>
Transformation	<ul style="list-style-type: none"> <li>• Initiative</li> <li>• Professionalism</li> <li>• Judgement</li> <li>• Communication skills</li> <li>• Flexibility</li> <li>• Persuasiveness</li> <li>• Perseverance</li> <li>• Vision</li> </ul>

Table 8 Important personality traits per phase

Concluding, from the literature five different company life cycle phases have been distinguished. For each of these five company life cycle phases, important personality traits for the management team to possess were identified. This has been done by mapping important steps in each of these five phases and focussing on difficulties in the evolution of a start-up. In order to ease the transition between life cycle phases which can trigger crises, certain personality trait were identified which can counter these difficulties and thus ease these transitions. All in all, a list is provided containing important personality traits per company life cycle phase for a management team to possess. These personality traits will serve as a foundation or baseline for later parts of this research. Furthermore, these traits will be tested during the interviews with venture capitalists in order to have a more accurate baseline on which the entrepreneur or management team can be tested with regards to the management readiness.

### 3. Method

The data collected for this research will be from four different sources. Each of these four sources will be described in detail in the sections below. The data sets which will be collected are needed for the following points. This first data which will be collected will be a case study which will be undertaken at PPM Oost. The information which will emerge in this case study will give valuable insights into the investment process of a venture capitalist, important steps and points of interest will be documented. The second data is to confirm the selection and rejection criteria found in the literature. This is done via the database of PPM Oost which registers all rejected proposals for investment and via a series of interviews with the investment managers at PPM Oost. The third point is to identify personality traits which the investment managers of PPM Oost find important for an entrepreneur or management team to have in a specific phase in the company life cycle. This information is needed in order to provide further strengthening for the personality traits found in the literature and to identify what personality traits the investment managers find of utmost importance. The fourth point is the ODC data which will be collected via an internet survey conducted among start-ups. The results of the ODC test will be compared to both the literature and to results of the interviews with the investment managers at PPM Oost. By comparing the results of the ODC test and the combination of the literature and the results of the interviews, an indication can be given whether or not the ODC test is suited in order to test the management readiness of a start-up. Furthermore, the practical relevance of the ODC tool and the usability of the results will be discussed. This will be done using the insights gained in the case study with regards to the investment process at PPM Oost.

In order to provide evidence that PPM Oost can serve as a representative sample for a venture capitalist, a calculation has been made in order to come to the Internal Rate of Return (IRR) of the company, the results of this calculation can be seen in figure 4. The IRR was compared to the mean of the United States market. Figures of this market were taken from a report published by the National Venture Capital Association (Cambridge-Associates, 2013). The results from the figure below show that PPM Oost is performing above the average in the years 2003 till 2005, from 2006 till 2009 it is slightly under the average but still making a positive IRR. Only in the year 2009 the company did have a negative performance on its investments. From 2010 and onwards it performed above the average of the United States market. From these figures we can assume PPM Oost can provide an indication as to which selection and rejection criteria a venture capitalist uses. PPM Oost can be used for this because the company does not perform aberrant to the venture capital funds in the United States and thus can be seen as a representative for the venture capital industry.

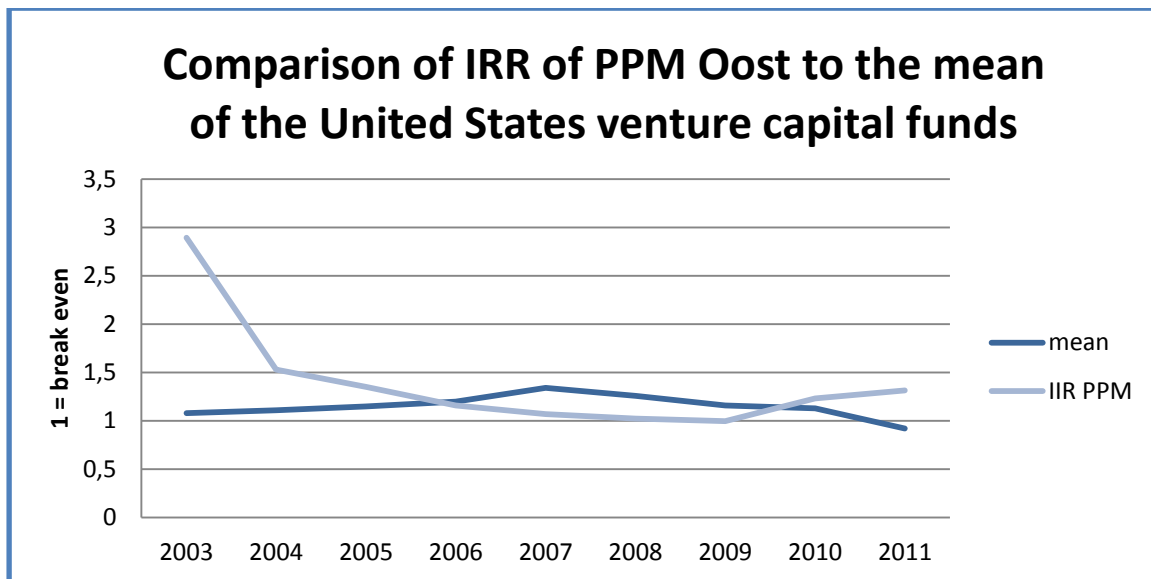


Figure 4 Comparison of the internal rate of return of PPM Oost and the average venture capital fund in the United States

This research is undertaken in a delicate research field of finance and more specifically venture capital. Sensitive business information will be used during this research which needs to be handled with utmost care and respect. The start-ups which will be part of this research and the data which are made available by PPM Oost are considered confidential. This is because most start-ups have a new technology or product which is their (potential) unique selling point and which they do not want disclosed. For that reason potential harmful data for the participants in this research will be altered or made anonymous in order to prevent harmful (business) situations of occurring. Furthermore, the size of an investment is also considered classified information, an indication however can be given in most cases.

In this study a start-up is a company which is no older than 7-years of age, this is chosen by the research due to the many different definitions concerning a start-up. Furthermore, this study will focus on start-ups in the Netherlands with an additional focus on the provinces of Overijssel and Gelderland but will not exclude companies from other parts of the Netherlands or internationally. This research will focus on early stage start-ups, meaning it will focus on first, second and third rounds of financing. In order to have a sharper focus, only start-ups which operate in the sectors of high-tech will be included in the research.

## 3.1 Case study PPM Oost

### 3.1.1 Data Collection Method

The case study will be used in order to gain a better understanding of the investment process for a start-up which seeks funding at a venture capitalist. In this case study, senior investment managers from the high-tech team at PPM Oost will be closely followed and monitored in the steps taken in the investment process. This is done by observing the investment manager during the different steps that are taking in the investment process. In other words, the investment manager was documented during the different meetings which took place with regards to the investment decision, this was done by following the investment manager in his daily job related tasks. These steps are: intake (lead), presenting the case to the management of PPM Oost (prospect), writing an investment proposition and defending it for the management of PPM Oost and finally closing the deal. During the different steps taken the investment manager was asked for his reasoning. Focus is on how the investor readiness is judged at this moment and how this could be improved. The insights gained at this case study will be used to support the results found during the literature review regarding the selection and rejection criteria and the personality traits per phase which prove to be important. Furthermore, the insights will be used in order to improve the practical relevance of the tool and will help in designing a tool which can be used in the day to day workflow of a venture capitalist.

### 3.1.2 Subject for study

The subjects for the case study are three start-ups which will be briefly described below. The start-up will remain anonymous due to their business information is classified and could potentially harm the company. The start-ups are selected based on the timing on which the investment proposition was send to PPM Oost. The three start-ups are described in table 9.

Characteristic	Start-up 1	Start-up 2	Start-up 3
Sector/Branch	Software	High-tech machinery	High-tech production
Age	6-years	5-years	2-years
Management	Heterogeneous and experienced	Homogeneous and inexperienced	Homogeneous and experienced
Product	Selling	Developing and selling	Developing
Market	Acceptance of product	Small acceptance	No acceptance
Prior investment round	Yes	No	No

Table 9 Sample description

### *3.1.3 Measurements*

During the case study the investment readiness of the start-up will be measured and a better understanding of the investment process will be gained by closely monitoring the steps taken. The comments made by the investment manager and the persons who reviewed the investment proposals were taken into account and used in this research. The focus was on how the investment readiness was determined. This is done in order to gain a better understanding of the weaknesses of the current method and what the possible new tools for investor readiness can add.

## **3.2 Database PPM Oost**

### *3.2.1 Data Collection Method*

The database of PPM Oost will be utilized to identify why an investment decision was made negatively. In other words it will be used to identify and strengthen the rejection criteria found in the literature. The database of PPM Oost stretches from 2000 till present day. In this database all investment propositions are registered using fixed fields of information. Eventually a lead is rejected or becomes a prospect. If and when a lead is rejected the reason or reasons for rejection are registered. This registration asks both for a choice between a selection of pre-determined rejection criteria and has an open field for additional information. This means it can be used for both quantitative research regarding the pre-determined rejection criteria and qualitative research regarding the open fields. Due to this careful registration of leads and prospects this workflow management system is a very rich database. The data can be extracted using Microsoft Access and can be imported into Microsoft Excel. These rejection criteria will be compared to the rejection criteria found in the literature in order to determine a match between practice and theory.

### *3.2.2 Subjects for study*

The subjects in this part of the research are the turned down investment propositions. These propositions are from five different sectors namely; high-tech, life-sciences, agro-food, clean-tech and manufacturing. The data sample contains propositions from January 2007 until June in 2013. The total sample size is 1884 investment propositions.

### *3.2.3 Measurements*

The measurements are the rejection criteria which can be reviewed using the database. This data has a quantitative part because of the predetermined rejection criteria of which an investment manager needs to select one and a qualitative part because a further description of the reason for rejection needs to be given. This data can be used in order to confirm or reject the criteria found in the literature.

## **3.3 Interviews PPM Oost**

### *3.3.1 Data Collection Method*

The third data sample will consist of interviewing venture capitalists. This interview has a qualitative nature due to it being semi-structured. A semi-structured interview is well suited because it lets the venture capitalists tell his/her own story. This method is used in order to steer the interview in a certain direction to gain information in certain fields but still letting the venture capitalists give their experience (Cohen & Crabtree, 2006; Louise Barriball & While, 1994; Wengraf, 2001). This is used in order to better grasp the mind of a venture capitalists regarding the selection and rejection criteria and gain an insight in their vision on investor readiness.

Furthermore, during the interviews the venture capitalists will be asked to subdivide personality characteristics or traits among the different entrepreneurial phases taken from the literature. This has been done via the following procedure. The venture capitalists received a list containing the five company life cycle stages with a short description. After reading what each phase incorporates, the venture capitalists were asked to pick the four most important personality traits for each phase. The company life cycle phases and traits were displayed in a matrix, in this manner the venture capitalists had a clear overview of their choices. The result from this test can be used to identify what traits or characteristics are most important in each phase according to the venture capitalists. This data can be compared to the findings from the literature and can be used to determine what teams can be considered investor ready from a venture capitalist point of view. The conducted interview and test can be viewed in appendix 7.2.

### *3.3.2 Subjects for study*

Fourteen venture capitalists were interviewed, all these venture capitalists were investment managers working at PPM Oost. This provided a wide variety of venture capitalists due to the fact that PPM Oost invests in six different sectors namely: high-tech, life-sciences, agro-food, clean-tech,

manufacturing and fund to fund investments. It also provided a diverse sample because the investment managers having different backgrounds. Furthermore, it provided a sample of venture capitalists who rate many investment propositions on a yearly base. At the moment the investment managers at PPM Oost review around 600 to 800 investment propositions yearly and PPM Oost is the most active investor in the Netherlands for four years in a row in terms of investments made (AgentschapNL, 2012).

### *3.3.3 Measurements*

The interviews with the investment managers at PPM Oost will be aimed at; identifying the selection and rejection criteria used and determining their perception on investor readiness.

Furthermore, in the second part of the interview; a test will be done with the investment managers to determine what the important personality traits are for an entrepreneur or management team for each start-up phase. The traits which were indicated as important seven times or more times will be seen as of utmost importance due to the fact that half or more of the sample size picked this trait.

## **3.4 Odin Development Compass (ODC)**

### *3.4.1 Data Collection Method*

The final data sample will be collected via the Odin Development Compass or ODC test. The entrepreneur will be informed that it is a psychoanalytical tool and that it can be used in order to test in what areas her or his natural strengths and weaknesses/fragile strengths are. This is a test which takes between 10 and 20 minutes and it has to be taken online. The setting in which the test is taken is not of influence on the test results. This is due to the fact that the test consists out of two sections. The first one is answered with what is called the lizard or reptilian brain. The second part of the test is done using the mammalian or limbic brain in combination with the neocortex. The functioning of the brain ensures the same results because the first part is done using the person's instinct (de Jager & Doeze Jager, 2014).

### *3.4.2 Subjects for study*

The start-ups which will be tested will consist out of a sample of companies from PPM Oost, both in portfolio and in the investment proposition phase. The start-ups will be taken from the sector of

high-tech systems. This choice has been made in order to have a more specific scope (Babbie, 2012). Two companies will be tested with the ODC tool. The true sample will be the CEO of the start-up.

	Start-up 1	Start-up 2
Number of persons in management	3	2
Education	Technical	Technical and Business
Start-up phase	Pioneering	Pioneering
Technology readiness	7	5
Market readiness	The product is in the Introduction phase and it is being accepted by early adopters	The product is in the development phase and is being accepted by innovators
Company life cycle	Pioneering phase	Pioneering phase

Table 10 Sample description

3.4.3 Measurements

The ODC tool accesses the preferred unconscious archetypal drivers of a person. Furthermore, it uncovers their shadow-opposites (natural resentment) and shows the impact of past and present experience on personal unconscious and conscious drivers.

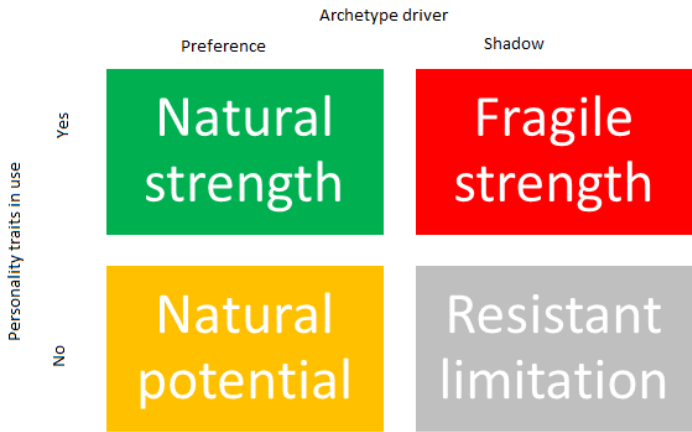


Figure 5 four typologies

The natural strength is indicated in green, meaning it is a personality trait which is used and is in the preference of the person. The fragile strength is in red, indicating it is a personality trait which is used but is in the shadow side of the person. The grey areas are traits which are not being used and



cannot be developed because these are not a natural competence and in yellow are the traits which are not being used but can be developed because these are in the natural preference of the person.

The ODC tool also relates the different drivers and shows the dynamic interaction between the different elements. The tool is able to identify specific personality traits a person possesses, these traits can be matched with the traits found in the literature and during the test conducted with the investment managers at PPM Oost. By specifically measuring personality traits which are comparable to the personality traits found in the literature and are an exact match to the personality traits found during the test conducted with the investment managers at PPM Oost, a clear indication can be given whether or not the tested entrepreneur possesses the personality traits which are found to be important. In this manner the measurability of the management readiness can be increased. In short, the ODC tool is able to measure the personality traits an entrepreneur or a management team possesses, which can be compared to the personality traits identified by combining the literature and the data from the test conducted during the interviews with the investment managers at PPM Oost.

## 4. Data

In the following section, the results from the various data sources will be presented. First the case study at PPM Oost will be presented in order to explain the new insights gained in the investment process. Second, the results from the data base of PPM Oost will be presented. From this data base the rejection criteria used in practice will be presented. Third, the results from the conducted interviews will be presented. The results from the interviews are divided into three sub paragraphs in order to provide a clearer representation of the results. First, the selection criteria which emerged in the interviews will be given. Second, the rejection criteria will be given. third, the personality traits which the investment managers considered important per phase will be presented. The final data presented are the results of the ODC tests, which will present information with regards to which personality traits the tested person has.

### 4.1 PPM Oost Case Study

In the following section, the case study which was done at PPM Oost will be described and the results with regards to the investment process and investor readiness will be explained. Regarding the investment process it is important to understand that PPM Oost works with multiple different funds. Each fund, has its own internal process and criteria which means that there will be small differences in the three cases which will be discussed below.

#### 4.1.1 Case study 1

The first case study concerns a software start-up, which already received two prior rounds of investment by venture capitalists. This start-up can be classified as a start-up with a technology readiness level of TRL9. This is due to the product already being sold to major customers and it is fully developed and tested. Regarding the market readiness, it can be concluded that it is in the growth phase of the product life cycle. This is because the first buyers of their product are being served and the diffusion of their technology is only just being accepted. Furthermore, the difficult choice between market share or profit growth is being discussed. Comparing the product with the product life cycle it can be noted that the product is starting to be accepted, placing it in the section of the early adopters. The management team was very experienced and all members had university degrees and had working experience in the sector and with larger companies. The team was found to be utmost suited for bringing this start-up to success, all three investing venture capitalists agreed. Franke et al. (2008) describe the above characteristics of the management team as attractive for investors, increasing their chance of attracting a venture capital investment. The investment process went rapidly, the deal was done within two months. All parties involved were pleased and confident

the company would flourish. Nonetheless, within four months' time the chief executive officer (CEO) of the company was replaced and a month later the chief financial officer (CFO) due to disappointing results. One could speculate why this previous assumed to be good management was replaced. What can be said is that the board of directors had no confidence in the management any longer because of disappointing results and because of this the management team was changed, as is also described in Kamm and Nurick (1993). The new management is a seasoned team, which has had four previous start-ups in the growth phase and sold these with great success. Currently, the start-up is performing increasingly better and is back on their predetermined path with the new management via a new strategy. It often occurs that a new management chooses a new strategy when taking over a venture (Wiersema & Bantel, 1992).

The data which will be used in later parts of this research, is the fact that the management team which was found very suited was replaced nonetheless. The new management team which was a seasoned team with regards to the growth phase of the company life cycle, improved the financial state of the company strongly. This process leads to questions with regards to whether or not the first team was well suited to lead this start-up during this company life cycle phase and what was different in the second management.

#### 4.1.2 Case study 2

The second case, which was closely monitored during this study is a start-up looking for its first round of financing. This company which made a transition from providing a service to building a high-tech machine financed their growth with own financial resources. However, for the transition phase between service and product additional financial capital was needed. The first high-tech machine has recently been sold to a customer. Nonetheless, this first machine was a prototype which still needs to demonstrate in an operational environment. This places the product/technology in TRL 6.

Regarding their market readiness, the start-up is located in the introduction phase for the product life cycle. For the innovation adoption cycle the product is located in the innovators section due to the product just being in the prototype phase and still needs to prove itself. For the management the team consists of four highly educated men. However, all members of the management team had a technical education and no business background. During the investment process it became very clear this was perceived a weak point of the start-up. In the phase of the investment process in which the case is presented to the investment committee who decides if an investment will be made this was one of the key points of discussion. That homogenous teams are a weak point for raising capital was also proven in the research by Zimmerman (2008), who found that heterogeneous teams raise more

capital. Nonetheless, the team was considered suited for the pioneering phase in which this start-up was located but for future growth additional member might be needed.

From the case above it is interesting to note that the management team proved to be a point of discussion during the investment process. The main discussion was whether the management team would be able to make the transition towards a sales organisation. It was difficult to provide evidence or facts that this management team is indeed suited for leading the start-up. This was because the management is evaluated by the investment managers but solely by the conversations which took place. This leads to the fact that the gut-feeling of the investment manager plays a role which is difficult to present.

#### 4.1.3 Case study 3

The third and final case is a start-up which is currently financed by friends and family which is very common during the process of creating a venture (Kotha & George, 2012). Nonetheless, this start-up needs capital for scaling up the business. It concerns a capital intensive business namely a production facility. The product and technology can be considered TRL 9 due to the start-up having a sister company which is fully operational. Furthermore, it has already sold some of its products to customers. With regards to its market readiness, the product life cycle the start-up is in the growth phase. This is because it still has to penetrate the market, the first customers have placed repeated orders and the focus is on sales. Regarding the diffusion of the product, it can be stated that it is located at the early majority of the normal curve. This is because of customers accepting the product produced with this new process more and more. Regarding the management of this start-up, it is a complex case considering the management team having shifted multiple times during the investment process. Only two persons remain at the start-up at the moment in the management team. These two persons have previous experience in setting up a company with venture capital and leading a venture from the pre-start phase until the growth phase. The biggest problem this start-up faced during the investment process was the fact that there was no complete management team. This was a factor which weighed heavily during the decision making process, for this reason the management already had to start looking for new team members during the investment process if it wanted to continue making a deal with PPM Oost. This deal was turned down on the basis of the management team.

In the case above, the management team again proved to be a crucial point. In this case the investment proposition was turned down on this criterion. This was because the CEO appeared as

imprecise and there were no other management team members. Furthermore, because the business plan was unclear and the financial plan was not supported by facts it was turned down.

#### 4.1.4 Overall findings

In all three cases above, the team proved to be the most important factor in the decision making process. Nonetheless, other factors such as a possible high return, favourable market characteristics, amount of capital needed, and the risk profile are important in the overall decision making process. However, the management team and in most cases also the owners of the start-up are crucial because they need to lead the start-up to success or to the next phase. This makes the management team a very crucial factor in the investment process and important to make a careful and calculated decision regarding this factor of the start-up. It also proves that the gut-feeling of the venture capitalist can be wrong. A management team which looks very well suited proves to be not as good in the execution as anticipated. Reasons why this team was looked at so favourably were provided by Franke et al. (2008) who showed that an entire team with relevant industry experience and a mix of both technical and management backgrounds increases the chance of an investment exponentially for the selection criteria the management. This shows that a tool which tests the management and a standard or overview of important traits for each company life cycle phase can aid in the decision making process of the investor.

## 4.2 PPM Oost data base

After determining, PPM Oost could serve as a representative sample of a venture capitalist the data base it maintains was analysed. This focus is on validating the rejection criteria used in practice.

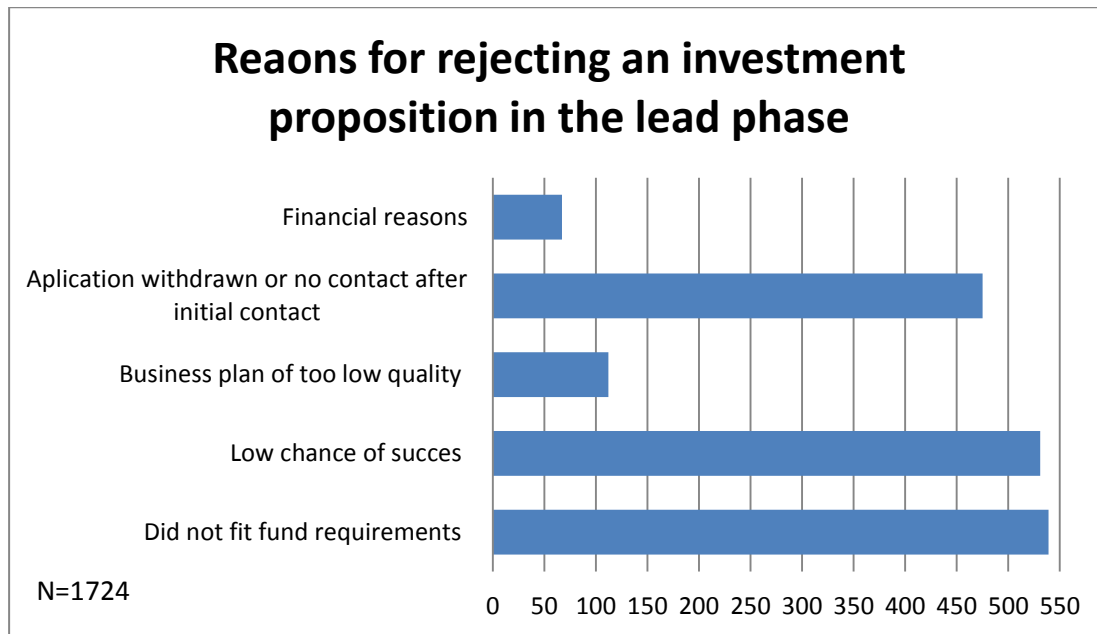


Figure 6 Rejection criteria and frequency used

In figure 6, the reasons why investment propositions were rejected or turned down are presented. From the figure it can be concluded that there are five reasons why investment propositions are turned down. From the total sample of 1884 cases, 1724 are presented above. This is due to the fact that in 160 cases no choice was made between the predetermined options for rejection. It is important when observing figure 6 that this figure concerns the lead phase. This means it concerns the first contact with an entrepreneur and in most cases only a business plan is submitted. Taking this into account, three of the five reasons are used the most. The most important reason was the fact that the proposition did not fit into the fund requirements. This is because, PPM Oost invests with government funds which have very specific investment criteria. The low chance of success was the second most frequently used reason. This criterion seems very brought. Nonetheless, the factors which belong to this criterion are the market circumstances, the innovativeness of the product or technology and the business model. The third reason is interesting because the entrepreneur decided to withdraw the application or there was no contact after the first meeting. This was mostly due to equity aversion, meaning the entrepreneur was not ready to give up part of the ownership of the company. The other two factors were used less. The business plan is an interesting one with regards to the findings in the literature, which indicate this being one of the most important reasons

for rejection. The financial considerations were used infrequently, this can be because in the first initial lead phase not a lot of financial information is shared.

### 4.3 PPM Oost Interviews with venture capitalists

In the following section the data which were collected during the interviews at PPM Oost will be presented. This is done in three sections, the first focuses on the selection criteria, the second on the rejection criteria and the third focuses on management readiness and more specifically which personality traits the investment managers find important for an entrepreneur to possess.

#### 4.3.1 Selection criteria

During the interviews with the investment managers at PPM Oost interesting topics emerged. These topics or points were the result of letting the investment manager tell how he/she acted in the investment process. More specifically how an investment proposition was reviewed. The points which almost all investment managers mentioned were: the management, the technology or product, the market, the understandability and the fund requirements. In the paragraphs below the most frequently mentioned criteria are presented and the points on which the investment managers focussed.

The management team was mentioned in all interviews. It was mentioned that the management team is the most important factor in a start-up. This is due to the fact that in most start-ups, in either the pre-start or pioneering phase, the management team members are often the only employees. If the team is unable or not suited to bring the start-up at least to the next phase, there is a high chance of failure according to the investment managers. An important item regarding the management for the investment managers at PPM Oost was whether or not the management would be able to grow with the start-up, at least one phase. It was also stated that the team should not be homogeneous but preferable heterogeneous, this was because the management team needs to trigger each other and keep each other sharp. Furthermore, the execution power of the management proved to be of utmost importance during the selection process. If the management did not have a track record the investment manager would make his/her own considerations whether this team would have enough execution power. A phrase which summarizes the above was the statement; "first the jockey, then the horse", meaning the management team is considered more important than the company itself.

With regards to the technology and the product the interviews provided insights concerning how these points were reviewed during the investment process. The main point of interest, was whether

or not the product or technology was in line with market demands. The scalability of the technology or product was another key point during the investment process. It was even mentioned that when a product or technology is not scalable it is not suited for venture capital. Furthermore, a number of investment managers mentioned that the technology or product needs to be clear and understandable. This was because, if the entrepreneur was unable to explain the technology or product, the entrepreneur would not be able to explain it to a customer.

For the market, the following interesting points emerged during the interviews with the investment managers. The main question most investment managers asked an entrepreneur regarding the market was; “what problem and whose problem does the technology or product solve, is it a need to have or a nice to have”. Furthermore, the size of the market, the competition and the stage in which the market is in regarding the acceptance of the technology were mentioned as important items which weigh heavily in the investment decision.

The financial considerations were another item which multiple investment managers mentioned. Focuses was one the liquidity of the start-up, the size of the investment requested and whether it would bring the start-up to a breakeven level. Furthermore, the business model was an important element due to its need of being scalable. Related to this item was the expected return which could be achieved, this return needed to be in line with the perceived risk.

As mentioned before, PPM Oost invests with funds from the government and for that reason the funds have very specific criteria. This means the fund criteria are important in the selection process. A start-up needs to fit the fund requirements, for that reason the fund requirements were mentioned multiple times during the interviews.

Overall, the balance between risk and return proved to be the most important question. This is related to the above mentioned selection criteria and the possible profit which could be made on an investment. The section above leads to the following selection criteria which can be viewed in table 11 below.

Evaluation criteria
Characteristics of the entrepreneur
Management skills and experience
Venture team
Personal motivation
Entrepreneurs personality
Product/Service characteristics
Product attributes
Product differentiation
Proprietary
Growth potential



Market acceptance
Prototype
Market characteristics
Market size
Market growth
Competitive threat
Financial characteristics
Expected ROI
Expected risk
Size of investment
Liquidity
Other
Venture investment stage
Venture capitalist criteria

Table 11 Selection criteria

#### 4.3.2 Rejection Criteria

In the following section, points which emerged during the interviews about the criteria on which the investment managers rejected most investment proposals, will be presented. The criteria on which most investment propositions were turned down were the basis of the business plan, product, management team, market and the fund requirements.

The point which all investment managers mentioned was the business plan as a reason to turn down an investment proposition. This was because many business plans were incomplete, meaning it was not supported by facts, the plans were vague and or very bold. The investment size on many occasions not clear or defined what is was needed for and to which level the investment would bring the start-up.

The technology or product was also mentioned by almost all investment managers. With regards to the technology or product especially the scalability was a point on which propositions are turned down frequently. The developmental stage was another element for consideration, this was mostly related to risk. The intelligibility of the technology or product was an item mentioned multiple times, one investment manager mentioned: “at first I assumed I just did not have the specialized knowledge to understand the technology, now I know that if an entrepreneur cannot explain the technology to me, they are also unable to explain it to a customer”. Furthermore, the uniqueness of the product or technology was a point on which propositions were turned down frequently.

The management team also proved to be the reason for rejection a number of times. This had various reasons but many can be classified under gut feeling. This gut feeling, was the impression the investment manager would get from the entrepreneur or management team. A reason linked with the reasons described in the paragraph above, is the fact that proposals were turned down because

the entrepreneur could not give a clear and sound vision, path to take or value proposition to the market. A non-realistic mind-set of the management proved to be a point on which a number of cases were turned down. Elements of this unrealistic view were a too high valuation and it being non-negotiable and bold claims which could not be supported. With regards to the unrealistic view the investment managers stated that there is a clear difference between an ambitious plan and an unrealistic.

The market was an element mentioned by the investment managers on which propositions were turned down frequently. The market size was an important element, small markets were viewed as unfavourable, the same counted for niche markets. The competition was another criteria on which the investment managers focussed. This was because, if there was a lot of competition would the start-up be able to differentiate and if there was no competition is there market demand. Furthermore, the knowledge regarding competitors indicated the amount of market research which was undertaken by the entrepreneur. Market validation was an important element was another very important element. Start-ups with customers or launching customers were considered more positively.

The fund requirements were a criteria on which a lot of propositions were turned down. This is because PPM Oost has to take these criteria into account with the utmost care. Meaning, the start-ups need to fit the fund requirements perfectly. An example is that PPM Oost invests in the Dutch provinces of Gelderland en Overijssel, it is not allowed to invest outside this region. This is because it manages funds from these two provinces. Innovation and the size of the start-up were two more reasons which were used frequently.

From the section above the following list can be composed with regards to the rejection criteria. This list can be viewed in table 12.

Rejection criteria
Incomplete business plan
Missing facts
Investment size unknown
Product/technology
Scalability
Intelligibility
No unique selling point
Market characteristics
Small market
Low growth
Competition
Market demand/validation
Management team

Personality
Experience
Realistic view
Skills
Fund requirements
Location
Innovation
Size

Table 12 Rejection criteria

#### 4.3.3 Personal traits

During the interviews the investment managers at PPM Oost were asked to indicate what personality traits they personally found important for each of the five phases. For this test the five phases which were identified via the literature review were used. The personality traits from which they could chose were the traits which the ODC tool identifies. In the table 13, all test are summarized into one table.

Personality traits	Pre-start	Pioneering	Growth	Realization	Transformation
Business orientation & Perseverance	5	8	8	10	4
Communication skills & Customer Orientated	3	6	9	6	7
Independent & Leadership	1	2	5	8	2
Problem analytical & Planning and Organizing	2	5	4	7	5
Judgement & Decisiveness	1	5	8	3	7
Long term vision & Persuasiveness	10	5	5	4	7
innovation & Cooperation	9	4	0	0	2
Interpersonal sensitivity & Multicultural awareness	0	0	2	5	0
Initiative & Steering	7	5	3	3	8
Flexibility & Relationship Building	4	4	3	3	3
Commitment & Compassion	8	3	1	1	2
Goal Setting & Discipline	6	9	8	6	9
Total N=14	56	56	56	56	56

Table 13 Personality traits per company life cycle phase

In the section below, the five different phases will be discussed separately. These phases, are discussed separately because it can be concluded from table 11 above that all phases require different personality traits. This is based on the results of the tests conducted among the investment managers.

### 4.3.3.1 Pre-Start phase

During the interviews the following Personality traits were chosen by the investment managers for the Pre-start phase. The results are presented in figure 7.

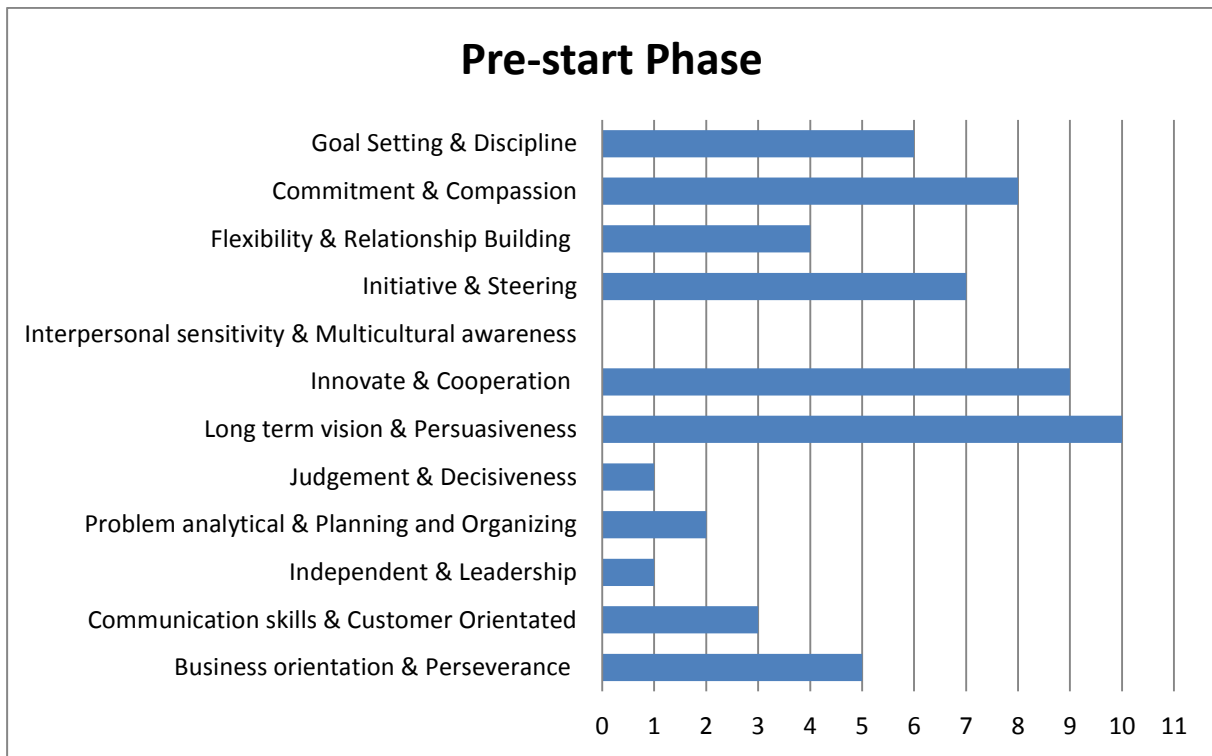


Figure 7 Chosen frequency of personality traits in the pre-start phase

From the figure above, it can be concluded that four personality trait groups are of utmost importance during the pre-start phase for an entrepreneur or management team to possess. The trait groups are: long term vision and persuasiveness, the ability to innovate and collaborate, commitment and compassion and finally initiative and steering. These are the traits found most important by the investment managers for the pre-start phase.

### 4.3.3.2 Pioneering phase

In figure 8, the results of the test for the pioneering phase are presented.

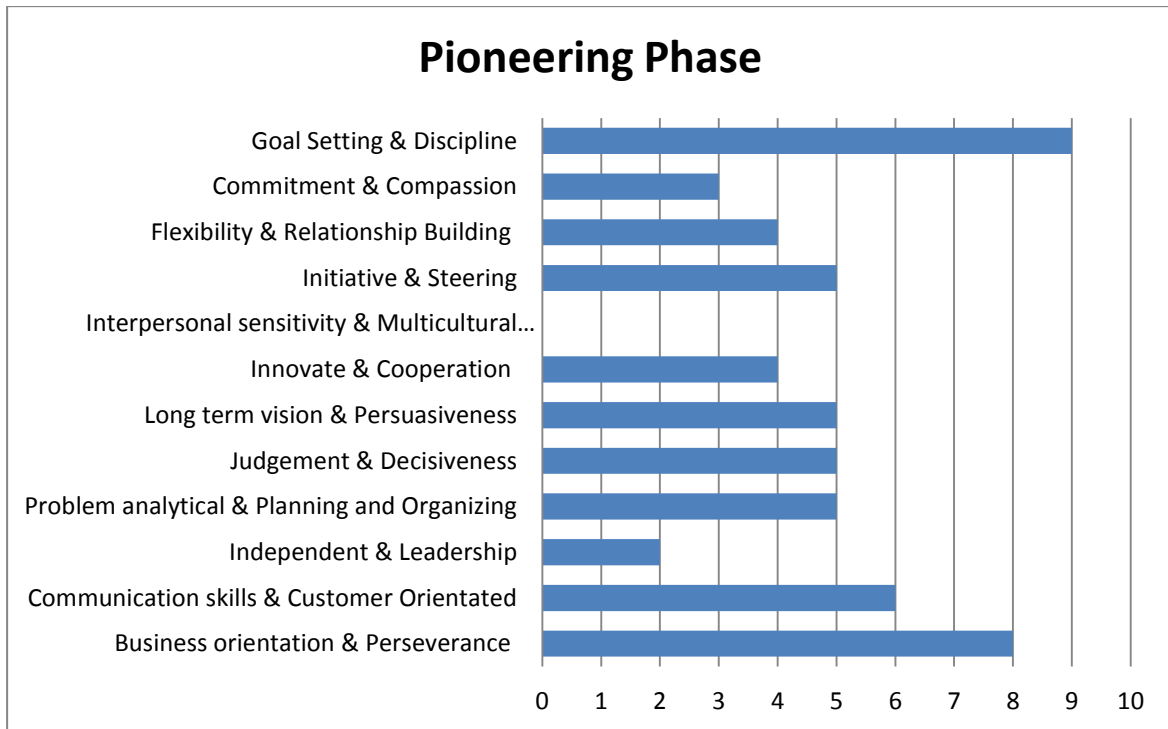


Figure 8 Chosen frequency of personality traits in the pioneering phase

From the figure above, two trait groups can be classified as important. Goal setting and discipline are most important in this phase, business orientation and perseverance is the second trait group which can be classified as important. Communication skills and customer orientation is a trait group which can also be considered important, this is because of the very spread image which appears in this phase. The investment managers apparently disagree which traits are important excluding the two group which jump out clearly.

### 4.3.3.3 Growth phase

In figure 9, the results of the growth phase will be presented.



Figure 9 Chosen frequency of personality traits in the growth phase

In the growth phase, there are four trait groups which emerge as important. Communication skills and being customer orientated, Business orientation and perseverance, The ability to set goals and discipline and finally, judgement and decisiveness were the traits groups which emerged as important.

#### 4.3.3.4 Realization phase

The result for the realization phase are presented below in figure 10.

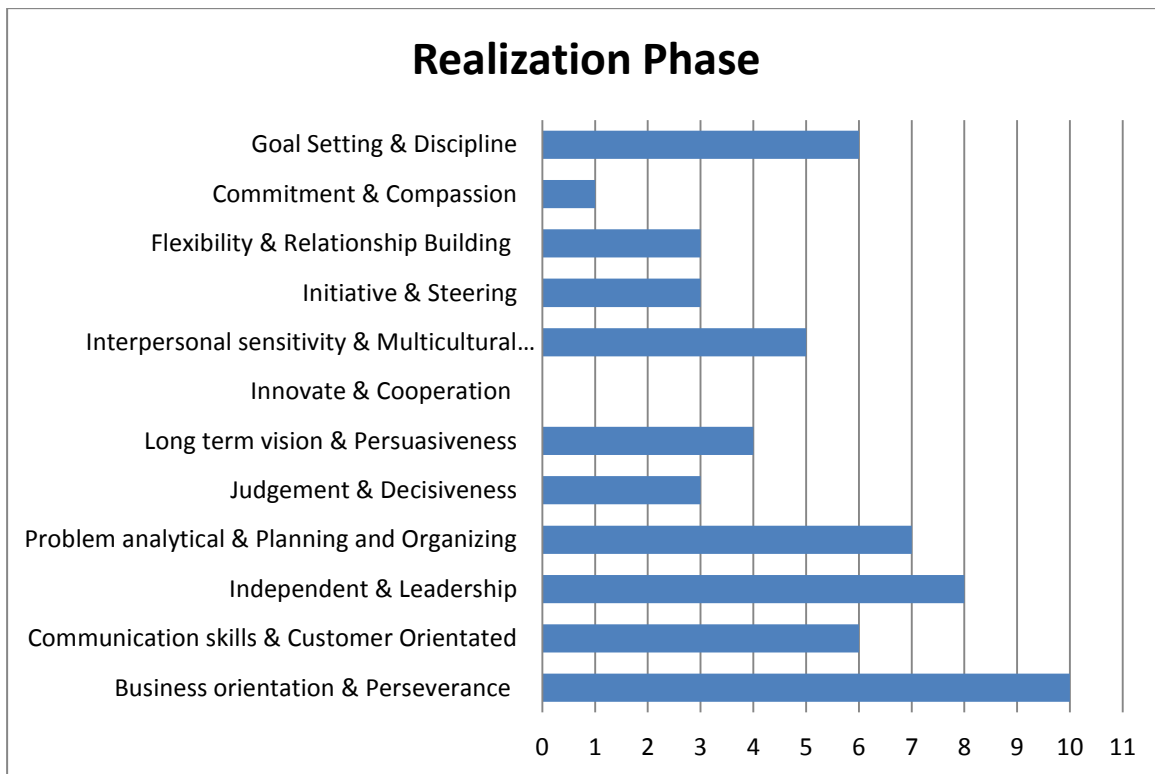


Figure 10 Chosen frequency of personality traits in the realization phase

With regards to the realization phase the following trait groups can be classified as important: business orientation and perseverance, independence and leadership and having the ability to analyse problems and being able to plan and organize

#### 4.3.3.5 Transformation phase

The most important traits for the transformation phase are indicated in figure 11.

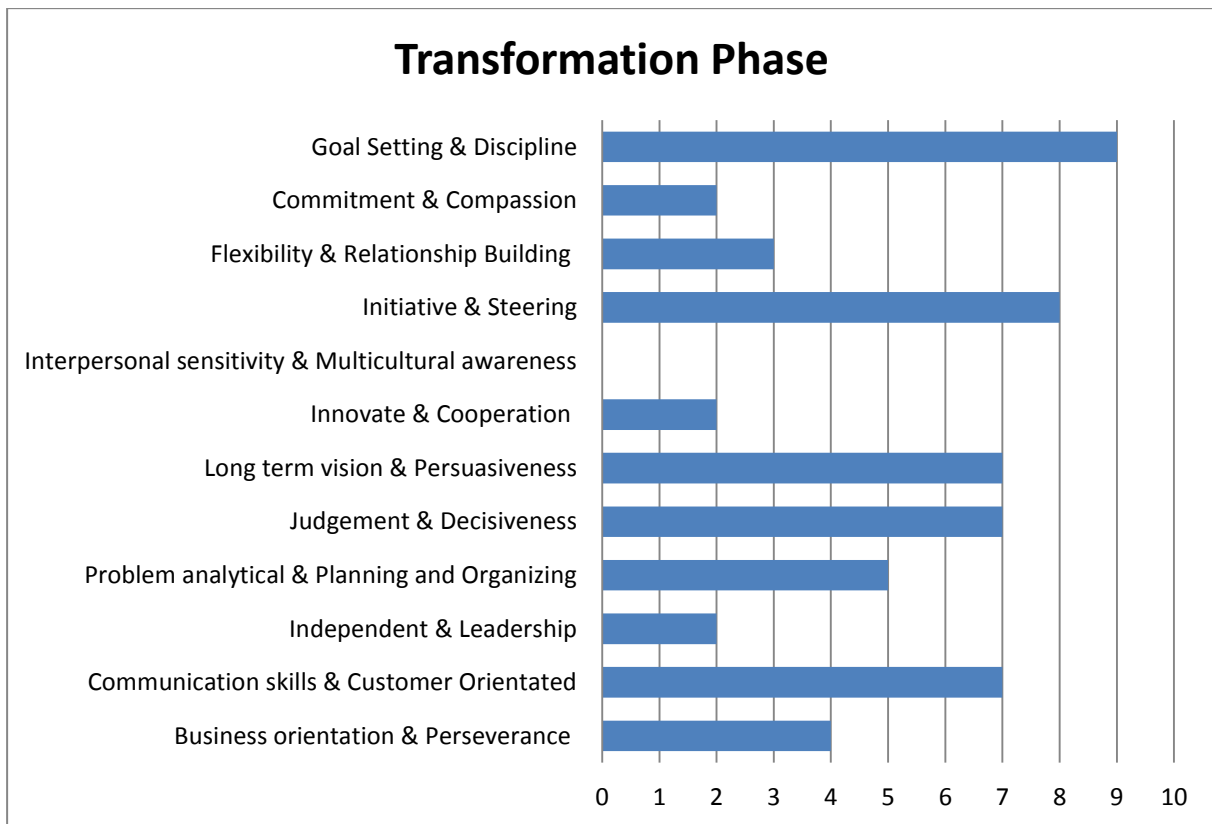


Figure 11 Chosen frequency of personality traits in the transformation phase

The transformation phase is the company life cycle phase which has a lot of trait groups which appear to be important in the view of the investment managers. Five traits groups were picked seven or more times. These were: the ability to set goals and have discipline, initiative and steering, long term vision and persuasiveness, judgement and decisiveness, and communication skills and being customer orientated.

#### 4.3.3.6 Overall list of personality traits per phase

When combining the different criteria selected by the investment managers the following list can be composed. This list provides an overview of what the investment managers at PPM Oost find the most important criteria for an entrepreneur or management team to possess in the five different phases. It is crucial to take into account that all traits are important, but the importance of the traits can differ per phase. The list containing the most important criteria per phase can be viewed in table 14.



Company life cycle phase	Traits
Pre-start	<ul style="list-style-type: none"> <li>• Long term vision and persuasiveness</li> <li>• innovation and cooperation</li> <li>• Commitment and compassion</li> <li>• Initiative and steering</li> </ul>
Pioneering	<ul style="list-style-type: none"> <li>• Goal setting and discipline</li> <li>• Business orientation and perseverance</li> </ul>
Growth	<ul style="list-style-type: none"> <li>• Communication skills and customer orientated</li> <li>• Business orientation and perseverance</li> <li>• Goals setting and discipline</li> <li>• Judgement and decisiveness</li> </ul>
Realization	<ul style="list-style-type: none"> <li>• Business orientation and perseverance</li> <li>• Independent and leadership</li> <li>• Problem analytical and planning and organizing</li> </ul>
Transformation	<ul style="list-style-type: none"> <li>• Goal setting and discipline</li> <li>• Initiative and steering</li> <li>• Judgement and decisiveness</li> <li>• Communication skills and customer orientated</li> <li>• Long term vision and persuasiveness</li> </ul>

Table 14 The most important traits per company life cycle phase

## 4.4 ODC Data

In the following section, the result of the ODC test of two CEO's will be presented. Their natural strengths and personality traits will be the focus. These personality traits will be matched or compared to the personality traits which are found to be important by the literature and the results in section 4.3.3. Because the ODC test is able to provide a clear overview of a person's personality traits which can be compared, the measurability of the management readiness can increase.

### 4.4.1 Start-up 1

In table 15 below, the results of the ODC test are presented. From this table can be reviewed what the natural strengths of the CEO and what the fragile strengths are. Furthermore, it can be identified which traits the CEO does not use but can develop and which he does not use and cannot develop. The natural strengths are indicated in green, the fragile strengths in red, the grey areas are traits which are not being used and cannot be developed because these are not a natural competence and in yellow are the traits which are not being used but can be developed.

Business orientation	Grey
Perseverance	Red
Communication skills	Green
Customer Orientated	Green
Leadership	Red
Independent	Grey
Planning and Organizing	Yellow
Problem analytical	Green
Decisiveness	Grey
Judgement	Grey
Long term vision	Yellow
Persuasiveness	Yellow
innovation	Green
Cooperation	Grey
Multicultural awareness	Yellow
Interpersonal sensitivity	Yellow
Steering	Yellow
Initiative	Green
Flexibility	Green
Relationship Building	Green
Commitment	Green
Compassion	Yellow
Goal Setting	Yellow
Discipline	Yellow

Table 15 results of the ODC test CEO 1

From this table can be concluded that the personality traits this CEO possesses are: communication skills, customer orientation, problem analyses, innovativeness, initiative, flexibility, the ability to build relationships and commitment.

#### 4.4.2 Start-up 2

In table 16 below, the results of the ODC test are presented. From this table can be reviewed what the natural strengths of the CEO and what the fragile strengths are.

Business orientation	Grey
Perseverance	Red
Communication skills	Grey
Customer Orientated	Grey
Leadership	Yellow
Independent	Yellow
Planning and Organizing	Yellow
Problem analytical	Green
Decisiveness	Grey
Judgement	Grey
Long term vision	Green

Persuasiveness	Green
innovation	Red
Cooperation	Grey
Multicultural awareness	Green
Interpersonal sensitivity	Yellow
Steering	Yellow
Initiative	Green
Flexibility	Yellow
Relationship Building	Yellow
Commitment	Green
Compassion	Green
Goal Setting	Yellow
Discipline	Green

Table 16 results of the ODC test CEO 2

From table 16 above, it can be concluded that CEO 2 possesses the following traits as a natural strength: problem analyses, long term vision, persuasiveness, multicultural aware, initiative, commitment, compassion and discipline.

## 5. Analyses

In this chapter, the data will be analysed and the link between the different data samples and the literature will be reviewed. Furthermore, the implications of the data with regards to the research question will be discussed. First the selection and rejection criteria will be analysed by combining three different sources of data, namely: the findings from the literature, the database and the interviews. Second the personality traits which emerged from the conducted test with the investment managers will be analysed and matched with the traits determined during the literature review. Third, the ODC data will be analysed and the practical application of the tool and its value will be under review.

### 5.1 Selection and Rejection criteria

In the following section, the selection and rejection criteria which emerged in the literature, database of PPM Oost and during the conducted interviews are analysed. PPM Oost can serve as a comparison for the literature due to the fact that the company acts as a regional venture capitalist and has shown to deliver positive returns. These returns, when compared to the average returns in the United States proved to be quite similar, being slightly higher or slightly lower. Resulting from this PPM Oost can be seen as a representative venture capitalist because in order to score average, the selection and rejection criteria should be comparable to other venture capitalists. Because of this, the comparison between the results of PPM Oost and the literature will be made. The rejection criteria will also be compared to the findings from the data base of PPM Oost.

Selection criteria comparison between PPM Oost and the literature	
PPM Oost	Literature
<b>Characteristics of the entrepreneur</b>	
Management skills and experience	Management skills and experience
Venture team	Venture team
Personal motivation	Management stake in the firm
Entrepreneurs personality	Personal motivation
	Entrepreneurs personality
<b>Product/Service characteristics</b>	
Product attributes	Product attributes
Product differentiation	Product differentiation
Growth potential	Proprietary
Market acceptance	Growth potential
Prototype	Market acceptance
	Prototype
<b>Market characteristics</b>	
Market size	Market size
Market growth	Market growth
Competitive threat	Barriers to entry
Trends in the market	Competitive threat
	Venture creates new markets
<b>Financial characteristics</b>	

Expected ROI	Expected ROI
Expected risk	Expected risk
Size of investment	Percentage of equity
Liquidity	Investors provisions
	Size of investment
	Liquidity
	Cash-out method
Other	
Venture investment stage	References
Venture capitalist criteria	Venture investment stage
	Venture capitalist criteria

Table 17 Selection criteria

Rejection criteria comparison between PPM Oost and the literature	
PPM Oost (database and interviews)	Literature
Incomplete business plan	
Missing facts	Missing facts
Investment size unknown	
Product/technology	
Scalability	Scalability
Intelligibility	No unique selling point
No unique selling point	
Market characteristics	
Small market	Excessive risks
Low growth	Market demand
Competition	
Market demand/validation	
Management team	
Personality	Personality
Experience	Experience
Realistic view	Skills
Skills	
Other	
Location	Start-up finance
Innovation	Application withdrawn
Size	Financial factors
Fund requirements	
Application withdrawn	

Table 18 Rejection criteria

The management team, the market characteristics, the business plan, the financial considerations and the product/technology are criteria which proved to be of utmost importance during the interviews. This supports the findings from the literature review which also indicated these three items as important (Hudson, 2005; Khanin, Baum, Mahto, & Heller, 2008; I. MacMillan et al., 1986; Zacharakis, McMullen, & Shepherd, 2007). Furthermore, the analyses of the database of PPM Oost with regards to the rejection reasons of investment propositions supports these criteria.

The management, proved to be important for both selection and rejection. This was confirmed by literature, interviews and the analyses of the database. The management team was an important reason for an investment manager to turn down an investment proposition according to the database of PPM Oost. In the literature, multiple authors mentioned the management as crucial for the start-up (Huselid et al., 1997; Thakur, 1999). During the interviews, all investment managers agreed that the management team was crucial for the survival of the start-up and for that reason a criterion on which selection is strict. Mason and Harrison (1996b) find similar results in their research with regards to the reasons why business angels reject a proposal. The reasons mentioned during the interviews and the reasons stated in the database are comparable with important elements found in the literature for the investment process. One of these reasons for rejection mentioned, was the fact that the management and the venture capitalist could not come to a deal or after a first initial meeting and after the venture capitalist explained the terms and criteria to the entrepreneur or management team, they did not get back in touch. This is mostly because of the entrepreneur or management team not wanting to lose shares are not being ready to lose control to an investor. The entrepreneur or management team not wanting to give up control has been a reason why many venture capital deals do not follow through (Dessi, 2005; Hellmann, 1998). This process is also known as equity aversion (C. Mason & Kwok, 2010). During the interviews, the topic of equity aversion or mind-set of the entrepreneur or management team was mentioned multiple times. The investment managers mentioned, that it is crucial an entrepreneur understands that in some cases shares have to be sold in order to grow and with that the acceptance control is shared with investors. Furthermore, during the interviews the mind-set of an entrepreneur was also mentioned in terms of realistic view on the start-up. This realistic views means seeing both strong and possible weak points of the plan and the task at hand. It also translated to a realistic view of the market in which the start-up operates. A finding which is surprising, because all investment managers agree the management is of utmost importance, is the fact that when asked what is important in a management team the answers differ. During the conducted test, which was part of the conducted interviews, it became apparent that there are large differences among the investment managers on which traits the management is rated. It is surprising that while there is consensus with regards to the importance of the management team and its influence on the success chance of the start-up there is little consensus as to which traits are important. Relating this to the conducted research of Douglas and Shepherd (2002), it can be stated that the points which are measured in their research with regards to the management are related to the perception of the venture capitalist. This research however indicates that the consensus between different venture capitalist can differ related to what is considered important.

The market was another element on which the literature, interviews and the database found agreement. In the literature, both in the selection and rejection criteria the market is mentioned frequently (G. Boocock & Woods, 1997; Franke et al., 2008; Hudson, 2005). In the interviews, the market proved to be an important topic, questions such as “who is the customer and what problem does the technology or product solve?” were found to be of utmost importance. In the database of PPM Oost, the low chance of success option was most frequently used. Via the written notes of the investment managers it could be concluded, that one of these reasons was the unfavourable market condition. Unfavourable market conditions were in most cases a small niche market with strong competition of large companies. If the market was not ready to accept a new technology or product and it still needed to be convinced the start-up needed to convince the investment manager with a sound plan of gaining customers. In most cases, launching customers were needed to convince the investment manager of the potential. Launching customers show the needed market demand and can help define or improve the product for the market and help increase its market readiness.

The technology or product which is closely linked with the market, was another point on which the literature, the interviews and the database found agreement with regards to its importance. In the literature, the technology or product was mentioned in many researches, such as in the literature review of I. MacMillan et al. (1986) and the literature review of Hudson (2005). During the interviews, the technology also emerged as an important criteria for either the selection or rejection of an investment proposition. Innovativeness, scalability, diversity and intellectual protection (IP) proved to be important criteria. In the database, the technology or product was mentioned as low chance of success. Investment managers, mentioned items which were similar to those mentioned in the literature especially the scalability and innovativeness combined with the IP were of utmost importance. The scalability of a technology or product was even called crucial for a venture capital investment during one of the interviews. Mensink (2010), found evidence that the scalability of a product is the most important selection criteria for Dutch venture capitalists.

The literature review, the interviews conducted and the database of PPM Oost also provided other important selection and rejection criteria which are not directly linked with either the technology, market or the management. An item frequently mentioned was the business plan the start-up provided. The business plan is an important step in securing a capital investment, whether it is from a bank or from a venture capitalist (Barrow, 2001; Kuratko, 2001). The business plan was also one of the reasons many investment propositions were turned down according to the database of PPM Oost. This research does not deny the importance of providing a clear and strong business plan. However, in this research, it is not the question of what should be included in a business plan. One of the research questions is: “when is a start-up investment ready?”. A step in becoming investor ready

is indeed providing the venture capitalist with a business plan which explains: what is needed, what it is needed for and what the goal is that the start-up wants to reach. Furthermore, these plans often had a more than prosperous outlook on the future, often described as a hockey-stick because of the very strong growth (Kollmann & Kuckertz, 2004). This unrealistic view of the future growth can also be linked to the management as mentioned previously.

The financial considerations are other items, both supported by the interviews, the literature and the database. Financial considerations are an important item in a venture capital investment decision due to the fact that the potential return needs to be high in order to have a balance between risk and reward (Manigart et al., 2002). Furthermore, if the financial plan or budget is not sound and reasonable, there is a high chance that a new investment round is necessary, which increases the risk and lowers the return (P. A. Gompers, 1995). A factor which also led to the rejection of investment propositions was the financial state of the start-up. One of these factors was the fact that the start-up was financed with too much debt and the new capital would be solely used to repay a loan and or interest on a loan. The amount of capital needed to start the start-up and bring it to a level on which it could be break-even and potentially profitable was a criteria which could lead to rejection.

The fund criteria or requirements are an important selection and rejection for PPM Oost. These fund requirements can be that the start-up has to be located in either Gelderland or Overijssel, it has to be in one of the five sectors in which PPM Oost invests or that it can be considered a small or medium sized enterprise. These fund requirements are specific for PPM Oost because it is part of a regional development agency.

Overall, this analyses has delivered a number of important selection and rejection criteria which are important to considering when discussing investor readiness. It is important to bear in mind that venture capital seeks the delicate balance between risk and reward. Taking both the selection and rejection criteria in mind this balance can become less instable. Focussing on investor readiness and more specifically on the conducted research by Douglas and Shepherd (2002) it can be stated that most of these selection and rejection criteria are incorporated in their investor readiness tool. However, while this tool can measure the investor readiness for the technology and the market it lacks measuring abilities with respect to the management. This is because when the venture capitalists were confronted by having to choose which traits are important in their perception differences occur. This indicates that it is unclear what should be measured and how this should be measured with regards to the management readiness. Furthermore, a clear link between the literature and the data from the conducted interviews and the analysed of the database of PPM Oost has been found. Comparing both table 17 and 18 it can be stated that the differences are minimal.



With regards to the selection criteria the literature provide a few more criteria. For the rejection criteria PPM Oost provided more rejection reasons or criteria compared to the literature. This difference can be due to the fact that more literature is available on the selection criteria compared to the rejection criteria. Because of these marginal differences the tables from the literature and from thus study can best be matched or be combined. This in order to provide a list which includes all important elements with regards to both the selection and rejection criteria.

## 5.2 Personality Traits

In the following section, personality traits found in the literature and traits which emerged during the interviews will be analysed and discussed. It will also be discussed, whether consensus exists between the findings. In table 19, the results of the literature review and those of the test among the investment managers at PPM Oost are presented. This is done in order to provide guidance as to what should be measured when discussing management readiness.

Phase	Literature	Interview
Pre-start	<ul style="list-style-type: none"> <li>• Vision</li> <li>• Creativity</li> <li>• Judgement</li> <li>• Boldness</li> <li>• Ambition</li> </ul>	<ul style="list-style-type: none"> <li>• Long term vision and persuasiveness</li> <li>• Innovation and cooperation</li> <li>• Commitment and compassion</li> <li>• Initiative and steering</li> </ul>
Pioneering	<ul style="list-style-type: none"> <li>• Initiative</li> <li>• Persuasiveness</li> <li>• Judgement</li> <li>• Vision</li> <li>• Decisiveness</li> <li>• Discipline</li> </ul>	<ul style="list-style-type: none"> <li>• Goal setting and discipline</li> <li>• Business orientation and perseverance</li> </ul>
Growth	<ul style="list-style-type: none"> <li>• Initiative</li> <li>• Independent</li> <li>• Customer orientated</li> <li>• Professionalism</li> <li>• Discipline</li> <li>• Persuasiveness</li> <li>• Delegate</li> <li>• Ambition</li> <li>• Planning and organizing</li> <li>• Judgement</li> </ul>	<ul style="list-style-type: none"> <li>• Communication skills and customer orientated</li> <li>• Business orientation and perseverance</li> <li>• Goals setting and discipline</li> <li>• Judgement and decisiveness</li> </ul>
Realization	<ul style="list-style-type: none"> <li>• Professionalism</li> <li>• Planning and organizing</li> <li>• Problem analysis</li> <li>• Delegating</li> <li>• Persuasiveness</li> <li>• Judgement</li> </ul>	<ul style="list-style-type: none"> <li>• Business orientation and perseverance</li> <li>• Independent and leadership</li> <li>• Problem analytical and planning and organizing</li> </ul>

Transformation	<ul style="list-style-type: none"> <li>• Initiative</li> <li>• Professionalism</li> <li>• Judgement</li> <li>• Communication skills</li> <li>• Flexibility</li> <li>• Persuasiveness</li> <li>• Perseverance</li> <li>• Vision</li> </ul>	<ul style="list-style-type: none"> <li>• Goal setting and discipline</li> <li>• Initiative and steering</li> <li>• Judgement and decisiveness</li> <li>• Communication skills and customer orientated</li> <li>• Long term vision and persuasiveness</li> </ul>
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Table 19 Comparison between the literature and the interviews conducted for personality traits per phase

### 5.2.1 Pre-start phase

The pre-start phase shows consensus between the results from the literature review and the test which was part of the interviews with the investment managers at PPM Oost. From the literature review, the following traits emerged as important in the pre-start phase; vision, creativity, judgement, boldness and ambition. The interviews at PPM Oost supported vision and creativity as important traits for an entrepreneur or management team to possess. Creativity however, was stated as the ability to innovate. Another similarity between the literature and the interviews is the trait of ambition as an important trait in the pre-start phase. Ambition is a core competence, which is categorised under long term vision and persuasiveness in the ODC test. These three traits are supported by both the literature and the interviews. The other two traits from the literature (boldness and judgement) can be linked to some extent to initiative. This is because, especially in the pre-start phase much initiative has to be taken by the entrepreneur, which requires judgement in order to make the right decision. Some level of boldness is required, because most start-ups are pioneering in new areas. Additions by the interviewed investment managers to this list are commitment and compassion. These traits were mentioned because starting a new company and bringing it to success requires a lot of effort and hard work, because of this commitment and compassion were found important in this phase.

It can be stated that both the traits from the literature and from the interviews support the image of an entrepreneur or management team which is innovative but with a long term vision. In order to achieve this vision a certain level of boldness is needed and commitment. Furthermore, this vision needs to be spurt on by a great level of ambition.

### 5.2.2 Pioneering phase

In the pioneering phase, there is consensus with regards to one trait group, namely discipline. Interesting to note, is that the traits mentioned in the literature, all five traits scored five votes

during the interviews. Nonetheless, because five votes are not considered of utmost importance, these traits were not chosen in the final list of traits from the interviews. An important difference is the fact that during the pre-start phase, it is clear that innovation and vision were found important by the investment managers, whereas in the pioneering phase, the transition to a “business mind” can be observed. This transition can be translated in: being business orientated, setting up goals and having the discipline and perseverance to achieve these goals. This is a different mind-set compared to the pre-start phase.

### 5.2.3 Growth phase

In the growth phase, more consensus exists between the literature and the data from the conducted interviews. There was consensus on four traits, namely; customer orientation, professionalism, discipline and judgement. From the literature, the image of an entrepreneur or management team emerges who will take initiative in order to grow, via a strict planning and organization with the ambition to persevere. From the interviews, a similar image emerges, namely; an entrepreneur or management team which perseveres the transformation started in the pioneering phase. The entrepreneur or team is still goal orientated and has the discipline and the perseverance to reach these goals. Furthermore, the customer becomes central and good communication skills become important, in order to have a clear value proposition for the market and thus the customer. Judgement and decisiveness are needed in order to choose the correct message and strategy for the market in order to add maximum value. When the two sets of traits are put next to each other, the link between the literature and the data from the interviews shows more consensus. Especially in the part of planning and organizing versus goal setting and discipline. This is because, without communication skills and having the customer in mind, it will be extremely difficult to be persuasive to a customer, as was observed during the interviews.

### 5.2.4 Realization phase

Making the comparison between the literature and the traits which emerged from the conducted interviews, it is interesting that in this phase, high levels of consensus exist between on the one hand the theory and on the other the practice of the investment managers. A direct link between professionalism, planning and organizing, problem analysis and delegating leadership can be made. From the literature the image of a growing venture which encounters growth problems emerges. The entrepreneur and or management team were used to have a clear and direct overview, making all decisions and making these ad hoc. This changes in the realization phases, the start-up has new rules

and procedures and the span of control becomes larger which means delegating leadership is important. In the data from the interviews, a similar image emerges, namely: the transition from being a small innovative start-up into a professional and business minded start-up. Because of this evolution delegating becomes more important, due to the growth of the start-up it will encounter new problems. In order to solve these growth problems, problem analyses and careful planning and organizing are of the utmost importance.

#### 5.2.5 Transformation phase

The transformation phase, is a phase which is quite different from the first phases. This is due to the fact that in this phase a start-up or venture either reinvents itself by becoming innovative again or has a high chance to slowly lose its position in the market. For this reason, it has some similarities with the pre-start phase concerning traits that are important for an entrepreneur or a management team. Consensus between the literature and the data from the interviews is reached on four traits namely; judgement, communication skills, persuasiveness and vision. These are four traits needed that can be logically expected in this phase because in this phase, the start-up or venture needs to reinvent itself (Sull & Houlder, 2006). This means hard decisions have to be made, requiring judgment and decisiveness. During these discussions, communication is important both internally and externally. Decisions have to be based on a vision or goal in mind which is persuasive in order to gain support. To achieve such a transformation discipline, flexibility and initiative are needed. This is one of the most difficult phases for a venture according by one of the investment managers. This is due to the fact that the rules and procedures learned in previous phases and the culture might need to be adapted in order to survive.

#### 5.2.6 Overall personality traits per phase

Analysing the data from the five different phase, three main areas can be discovered. The first one is the pre-start phase and the transformation phase, in these phases the focus is on innovation and long term vision. The second area is that of the pioneering and growth phase, in these phases the focus is on being business minded and customer orientation. The final area is the phase of realization which is a phase in which leadership and especially delegating leadership is important. These findings can provide guidance as to what should be measured when discussing management readiness. As to how this can be measured the following section will provide new insights.

## 5.3 ODC Analyses

In the following section, the results of the ODC test of the two entrepreneurs will be discussed.

During this discussion, the personality traits found in both the literature and the interviews will be compared to the profile of the CEO for the specific company life cycle phase in which the start-up is currently located. The CEO's profile, will be compared to the traits which emerged as important for the specific phase in which the start-up is with regards to its life cycle. Furthermore, the practical relevance and the usability of the test will be discussed.

### 5.3.1 Start-up 1

Start-up 1 is located in the pioneering phase with regards to the company life cycle. The criterion found important for this phase in both the literature and during the interviews with the investment managers of PPM Oost was the trait discipline. This is a trait which is in the natural strengths of the CEO. However, this is a trait not being used by the CEO. This means that while discipline is in his natural preference zone, meaning he could develop it into one of his strengths he does not use the trait at this moment.

With regards to the personality traits which emerged during the interviews, the CEO has goal setting and discipline as a natural strength. However, these are competencies not being used. The other personality traits which emerged from the interviews, namely: business orientation and perseverance, are not natural strengths but fragile strengths of this CEO.

From the personality traits which emerged from the literature study the CEO possess the trait initiative. Furthermore, persuasiveness and long term vision are in his natural strength zone. These could be interesting areas for personal development. With regards to judgement and decisiveness, these traits are in the fragile strength zone.

The CEO of this start-up, is classified by the ODC test as a people orientated communicator as his first natural preference. This makes the CEO very well suited for open communication and sharing information. Furthermore, he is well suited for sales. Other characteristics for this type of person are that they can listen and observe with great care. This gives them the ability to handle people from multiple cultures, making them even more suited for sales.

His second natural preference, is a persuading analyst. This type is very well suited to gain support by communicating facts. Furthermore, this type of person is well suited to share his vision and support this vision with facts. This means the vision is realistic and a reliable strategy can be determined. Other characteristics of this type of persons are that they are hard workers with a long term vision. Nonetheless, they are realistic and down to earth. Knowledge and science are the core competences.

An interesting fact, is that this start-up was part of the case study conducted. During the investment process, questions arose whether this CEO would be able or suited as a sales agent for the start-up. This was an important aspect of the investment decision, because the start-up changed its strategy from doing research into a selling organisation. During the investment process it was an important discussion whether the CEO would be able to make the transition. Nonetheless, with the knowledge available by the ODC test, the conclusion can be made that this CEO is able to conduct sales. If this information would have been available during the investment process, it could have affected the investment decision positively. This information would have contradicted the gut-feeling that an technical person is not suited for sales. This CEO might have a technical background but his personality traits make him suitable for sales. The findings above indicate that the ODC test would have had added value in this investment process due to the fact that it delivered new insights and contradicted the gut-feeling.

### 5.3.2 Start-up 2

Start-up 2 is in the pioneering phase and the traits associated with this phase will be linked with the traits this CEO has according to the ODC test. The CEO of start-up 2, has the criterion discipline as a natural strength and uses this competence. This competence was found important by the literature and the investment managers at PPM Oost. Because this competence was found important by both the literature and during the interviews, it can be concluded that this is one of the most important traits for an entrepreneur in the pioneering phase.

From the traits which were found to be important according to the literature review, the CEO from this start-up possesses the traits: Persuasiveness and long term vision. Judgement and decisiveness were traits which emerged from the literature but are not in the natural or fragile strength of this CEO. This means that these competences are not used by this person.

With regards to the traits which emerged during the interviews, the CEO has the trait discipline as mentioned before. Of the other three traits which emerged during the interviews, goal setting is in his natural strength. However, this trait is not being used. The other two traits, business orientation and perseverance are traits which are not in the natural strength of the CEO. Business orientation, is a trait which he does not use. Perseverance is a trait which is a fragile strength. This means, that this trait is being used but is not a natural preference of this person and could potentially when under duress become a weakness.

The CEO of this start-up is classified by the ODC test as a people orientated analyst. This type of person is well suited for creating a practical and acceptable planning. The CEO is able to combine his analytical qualities with his ability to listen to people no matter their background or culture. This type of person is open and unprejudiced with an unlimited hunger for knowledge. He is good at observing and has the ability to assess people.

His second natural preference is that of a persuading authority. This type of person has the urge to have an own domain and determining his own direction. Furthermore, they are able to persuade others and gain their support for the direction they chose. This type of person can also have the urge to reach the highest and be the very best, this can turn into being idealistic.

An interesting conclusion from this ODC test, is the fact that this person scored a CEO profile with regards to his second natural preference zone. This is interesting because, this CEO mentioned multiple times that he is more suited as a chief scientific officer (CSO) compared to CEO. The multiple investors who invested in this start-up shared this notion. Nonetheless, the CEO has the personality traits which would make him suitable for the position of CEO.

### 5.3.3 Insights and practical use

From the two cases used above insights can be gained towards to usability of the tool in order to measure the management readiness. With regards to the first case it can be stated that the ODC tool could have added valuable information regarding the management team. The CEO was assumed to be less suited for sales. However, the ODC tools indicates that this CEO does have the traits which would make him suitable for sales.

The profile or results of the ODC test of the second case provided information which was a new insight into the traits which this CEO possesses. Furthermore, it provided information that could aid in the development in this start-up. This is due to the fact that if another CEO is brought into the team, clashes might arise due to two persons preferring to delegate tasks and both have a strong vision for the start-up.

From these two cases can be concluded that the ODC test can provide new information into the management readiness of the management of the start-up. Furthermore, the ODC test can be used in order to determine which traits the management team or CEO possesses and match these with the traits which emerged in earlier parts of this research in order to determine whether the management team or CEO is well suited to lead the start-up in a specific phase. This information can be used in many different manners. First of all, it is valuable information during the investment process because

it delivers insights into the entrepreneur and management team which would be difficult to uncover by conversations. It can also be used in order to strengthen a team, by adding a complimentary member. Considering start-ups are not always in the position to add new members to the team, it could be used in order to build a board of directors which adds certain criteria.

Overall, it can be concluded that the ODC test can provides valuable new insights into the traits an entrepreneur or management team possess. The ODC test also proved to be valuable during the investment process by either confirming or contradict the gut-feeling of the venture capitalist. Furthermore, it can aid in the development of the start-up by creating a more effective team.



## 6. Conclusion Investor Readiness

In this section, the conclusion of this research will be given and the implications for the theory and practice. Furthermore, the limitations of this research and points for further research will be given.

### 6.1 Investor readiness

In the following section, the conclusions regarding investor readiness will be presented and discussed. The research question, which is: "What elements determine investor readiness and how can the measurability increase in order to provide an improved investment decision and create a better understanding between venture capitalist and start-up?", will be answered and discussed.

The literature and analysed data, support that investor readiness can be decomposed in three sub areas as in the research of Douglas and Shepherd (2002). One of the conclusions is that the management is one of the if not the most important criterion used by venture capitalists in making an investment decision. What is interesting, is that even though there is consensus that the management team or entrepreneur is the most important criterion, there is little to no information on which traits this management team or entrepreneur should possess according to venture capitalists. In this research a first step has been made in order to determine which personality traits are most important in which phase of the company life cycle, from a venture capitalists perspective.

Part of this research focussed on increasing the measurability of investor readiness. Using the previous research, the three sub areas of investor readiness were decomposed, which were supported by findings with regards to selection and rejection criteria found in both the literature and the conducted research. Measurement tools were identified for each of the three sub areas. For the technology readiness and the market readiness user friendly tools were identified, which match most of the topics mentioned in the research of Douglas and Shepherd (2002), who made important first steps in this research area. The third sub area required a different approach, the management readiness was measured using a series of questions in the research of Douglas and Shepherd (2002), which mend that the investors gut-feeling could play a role in the investment decision with regards to the management readiness (Zacharakis & Meyer, 1998). In order to increase the measurability of the management readiness, the ODC tool is incorporated. This tool gives an overview of the entrepreneurs or management teams personality traits and their natural and possible fragile strengths. These results can either confirm or contradict the investors gut-feeling regarding the entrepreneur or the management team. The results from the ODC test can furthermore be compared to the personality traits per company life cycle phase found in both the literature and during the interviews. This can provide the basis for a more grounded investment decision which is based more

on facts and less on the gut-feeling of the venture capitalist. This means that the measurability of investor readiness can indeed be increased.

Furthermore, these three investor readiness areas with the proposed models can add to the understandability of investor readiness in order to create a better understanding between the start-up and the venture capitalist. This is because the models are based on facts and less on the gut-feeling of the venture capitalist. It is also possible to provide a visual representation of the findings regarding the start-ups investor readiness. These models can also be used to interpret the selection and rejection criteria in a new light. This is because the selection and rejection criteria can be seen as quite vague, it is clear that these are important points in an investment decision but how should these be used. These models provide more clarity for start-ups compared to selection criteria by simply stating the readiness level which they need to have in order to be considered investor ready by a certain venture capitalist for investment . For example, considering a venture capital fund aimed at the growth phase the investment criteria or requirements for a start-up can be explained using the models as follows:

- Technology readiness
  - TRL between 7-9, this is because venture capital funds which aim at the growth stage will most likely not invest in start-ups who still need to develop their technology. This is because these funds make large investments aimed at commercializing the start-up. If the technology is not ready to be sold the risk increases and the delicate balance between risk and reward is distorted.
- Market readiness:
  - The product needs to be in the stage of growth with regards to the product life cycle. This is because even if the technology and product are ready to be sold there needs to be market demand.
  - With regards to the innovation adoption and diffusion cycle, the technology or product needs to be accepted by the early adopters. This is because growth stage venture capital funds are aimed at bridging the gap between sales and breakeven.
- Management readiness:
  - The growth stage venture capital funds aim at investing between the pioneering and growth phase of a start-up. According to this research for both the pioneering and growth phase different traits are needed. The personality traits which were found to be important in this research are the following for the growth phase: communication skills and customer orientated, business orientation and perseverance, goals setting and discipline and judgement and decisiveness. For the

pioneering phase the following traits were found to be important: goal setting and discipline and business orientation and perseverance

These requirements of a venture capital fund are more clear compared to selection and rejection criteria mentioned in the literature. This is because a start-up can be aware of the selection and rejection criteria venture capitalists use but the start-up is unaware when a certain fund will consider the start-up investor ready. With these models a start-up will have a better understanding as to contact which venture capital fund and when it is considered investor ready by a specific investor.

Finally, by increasing the measurability of investor readiness the investment decisions could potentially improve. This is because the decision can be based more on facts and less on the gut-feeling, especially concerning the management or the entrepreneur. Nonetheless, whether these tools have a positive impact on the investment decisions and thus the financial performance, is a question for future research. This question is in line with the research of Zacharakis and Meyer (1998), who state that venture capitalist do not always comprehend their own investment decision process.

Overall, it can be stated that this research has answered the research question which was: Is it possible to increase the measurability of investor readiness, in order to create a better understanding between venture capitalist and start-up and thus improve the investment decision? This is because evidence has been found that it is possible to increase the measurability of investor readiness. Furthermore, by using models it can be more understandable for a start-up to comprehend. With regards to whether or not the investment decision will improve further research has to be conducted. Nonetheless, it can be stated that evidence has been found that especially the tool with regards to the management readiness can improve the investment decision by delivering new insights.

## 6.2 Theoretical implications

The theoretical contribution of this research is mostly in the research topic of investor readiness. This research has highlighted multiple new insights by using a different research method as Douglas and Shepherd (2002) used. These new insights are mostly focussed on the management readiness and when a team is considered well suited for leading a start-up from one phase to the next from the venture capitalist's perspective. Furthermore, it strengthens the research of Douglas and Shepherd (2002) who decomposed investor readiness into three levels. This research found similar important points with regards to the technology readiness and the management readiness as were

incorporated in the investor readiness tool of Douglas and Shepherd (2002). Nonetheless, the management readiness is tested differently in this research. The added tool with regards to the management readiness can be seen as an add-on for the model designed by Douglas (2002). With the add-on the management readiness can be tested without using the investors gut-feeling. This can add to making a more grounded investment decision with regards to the management team.

During this research it becomes apparent that venture capitalists do not truly understand their investment decision on some occasions. This can be partly due to their gut-feeling decision making. Nonetheless, it is interesting that the management team was found to be a crucial factor in the investment decision process but it remains somewhat elusive as to which personality traits are found to be important. This can be due to the venture capitalist having difficulties in looking back on which criteria are being used in an investment decision (Zacharakis & Meyer, 1998).

The findings related to the personality traits which were found to be important in the specific company life cycle phases are a contribution to existing literature on this topic. This is because the literature has shown a gap in the area of specific personality traits which are important for the development of a start-up for a specific phase. This study has combined both literature and new empirical data in order to create a list containing the most important personality traits for a management team or an entrepreneur to possess from a venture capitalist perspective.

### 6.3 Practical implications

The results in this study have practical implications on a number of points. The first point is the fact that even though both the literature and the data suggest that the management team is the most important element in making a venture capital investment decision there is little consensus and knowledge on what the team should be judged. The data with regards to the personality traits an entrepreneur or a management team should possess uncovered that there are large differences among the investment managers on which traits are important. Nonetheless, by combining both the literature and the data from the test during the interview it was possible to design a list of traits which can be seen as important for an entrepreneur or management team to possess. This list can provide guidance as to which traits are important. Furthermore, the results indicate that leading a start-up from the pre-start phase to the transformation phase requires a very broad skill-set and a wide variety of traits. This result indicates that it is difficult for a single entrepreneur to lead the start-up from the pre-start phase to a fully grown venture.

The second point is closely related to the first, with regards to testing the management readiness it could be stated that the management team is judged using the gut-feeling. The ODC tool can

provide a valuable nuance for the gut-feeling. This is because the results from the test could either confirm or deny the gut-feeling. Nonetheless, it could serve as a valuable second pair of eyes. Moreover, the three tools or models could provide a valuable add on for the investment decision. This is because it is less based on the gut-feeling and more on facts. Especially the management readiness tool or ODC test can provide valuable insights into the traits an entrepreneur or management team possesses. With the knowledge of the natural strengths and fragile zones of an entrepreneur or team the team could be strengthened by adding a person which is complimentary to the team members. In this fashion an ideal team could potentially be build.

Furthermore, based on the models proposed in this research with regards to: technology readiness, market readiness and management readiness, clear investment criteria can be designed in order to communicate clearly towards start-ups what types of propositions a venture capitalist will consider, an example of this was presented in chapter 6.1.. In order words, these models can help create a common language among start-ups and venture capitalists.

#### 6.4 Limitations and Future research

A limitation of this research is that tools have been proposed in order to increase the measurability of investor readiness but these tools have not been tested on multiple cases. A first exploratory test has been done with regards to the ODC test and its application. Nonetheless, there have been no statistical tests in this research as to whether the investment decision improves. Furthermore, in this research the indication for a better decision making for the management readiness and thus the overall investor readiness has been provided. However, there has been no longitudinal study in order to prove the claim, that these models can improve the decision making process of a venture capitalist.

In future research, the performance of venture capital firms using tools measuring the investor readiness should be compared to the average performance of the venture capital market. These results, could provide the answer whether tools truly make a difference in the investment decision, as funds using these tools should have higher returns if the investment decision indeed improves. Another point for future research, are the personality traits which emerged during the conducted test. These traits, could provide a step towards a better understanding of which personality traits are important for an entrepreneur or management team in each specific phase of the company life cycle, focussed on start-ups. This research, has investigated specifically which traits are perceived as important from the venture capitalists point of view. This was done in order to provide a measuring

scale for the management readiness per phase in the company life cycle. Nonetheless, it could also be used for entrepreneurial research. A longitudinal study has to be done in order to determine whether start-ups or ventures with management teams which have the 'correct' traits will perform better in comparison to start-ups or ventures whose management team or entrepreneur does not have these traits. The result could be a new research topic for entrepreneurial or new venture creation research, Ciavarella et al. mentioned the following: "Since personalities are stable and inherent, while skills are taught, researchers should concentrate on determining the specific personality composition that relates to persistence to stay with the venture over the long term" (Ciavarella et al., 2004, p. 480).

With regards to creating a more common language for venture capitalists and start-ups tests have to been done in order to determine whether the understanding increases between the two parties. The insights gained, from a better understanding between start-up and venture capitalist could potentially lead to a better strategic fit. This is because if an investment is done the venture capitalist is part of the start-up and thus will contribute to the development. Having a better understanding between the two parties could add value during the phase after investment. Furthermore, it could lead to better investment propositions due to the increased understanding.

## 6.5 Conclusion

To sum up, it is possible to increase the measurability of investor readiness. This can be done using various tools which can be brought together to provide an answer regarding a start-ups investor readiness for the three different sub areas of which investor readiness is decomposed. This information can also be used in order to provide a better understanding between the start-up and the venture capitalist due to the fact that the investment decision is based on results of the tools and less on the investors gut-feeling. This could potentially lead to an improved investment decision. This research has provided information that investor readiness should be considered different for each phase in the company life cycle and thus for different investors. Evidence of this was found in the different personality traits the management should possess in the different company life cycle phases. This also provides evidence that there is a management best suited for each different phase in the company life cycle and that there is no ideal management to lead a start-up from the pre-start phase to the transformation phase. Nonetheless, evidence of these claims has to be supported by longitudinal research, but an important first step has been made. Overall, answers for the research questions have been found and the research has contributed by increasing the measurability of investor readiness.

## 7. Appendix

### 7.1 Investor readiness tool

In this section the investor readiness tool designed by Douglas and Shepherd (2002) is reprinted.

1. The invention or intellectual property that is the basis for this new venture is:

- (a) Not yet 'thought through' enough—the concept needs to be developed further
- (b) Well developed on paper, but not yet put into a prototype for practical evaluation
- (c) Embodied in a crude prototype that seems to work but with some problems yet
- (d) Embodied in a prototype that has been internally (alpha-site) tested successfully
- (e) Embodied in prototypes that have been externally (beta-site) tested successfully
- (f) I don't know, I am unsure, none of the above

2. The proposed new venture relies on technology or intellectual property that:

- (a) Is available almost totally already to all or any firms (i.e. not proprietary)
- (b) Will be largely revealed to potential competitors at or soon after start-up
- (c) Can only be protected as 'trade secrets' (i.e. not patentable)
- (d) Can be patented but the patent would not be very strong
- (e) Can be patented and the patent will afford strong protection
- (f) I don't know, I am unsure, none of the above

3. An application for a patent for this technology is

- (a) Not likely to be successful
- (b) Going to be written up and submitted by a patent lawyer
- (c) Submitted for Patent Cooperation Treaty (PCT) protection of the invention date
- (d) Submitted to the Patent office in one or more countries and is currently 'pending'
- (e) Has received patent protection in one or more patent jurisdictions
- (f) I don't know, I am unsure, none of the above

4. The strength of patent protection for this technology is currently

- (a) None at all (not applied for, not yet received a patent, etc)
- (b) Quite weak (narrow patent claims or similar technologies are available)
- (c) Moderately strong in at least one market/country
- (d) Moderately strong in several countries (i.e. patents in several countries)
- (e) Very strong in one or more major markets for this product or service
- (f) I don't know, I am unsure, none of the above

5. The prototype product or service (if there is one) has been tested

- (a) Hardly at all (i.e. not yet tested in any thorough manner)
- (b) Internally by the new venture team or their associates
- (c) Externally by a reputable testing organization
- (d) Externally by potential customers or users in their own locations
- (e) Modified and refined following external testing to incorporate customer suggestions
- (f) I don't know, I am unsure, none of the above

6. The number of different prototypes made, to incorporate improvements, is

- (a) One only
- (b) Two
- (c) Three
- (d) Four
- (e) Five or more
- (f) I don't know, I am unsure, none of the above

7. In my estimation, the prototype can be adapted for mass production with:

- (a) Great difficulty and causing substantial initial costs and/or high production costs
- (b) Some difficulty and will be relatively expensive to produce per unit
- (c) Relative ease, and can be mass produced at moderate cost per unit
- (d) Moderate ease, and can be mass produced at relatively low cost per unit
- (e) Absolute ease, and can be mass produced at relatively low cost per unit
- (f) I don't know, I am unsure, none of the above



8. The existence of market demand for the new product or service is based on:

- (a) Unsupported assertions (e.g. the managers of the new venture 'know' that people will buy it, but no proper market research has been done to support such assertions)
- (b) Casual empiricism (several or many potential buyers have been asked, in an ad hoc way, for their feedback on the product and whether they would buy it)
- (c) Feedback results from proper market surveys and/or focus groups
- (d) Test marketing experiments under controlled conditions
- (e) Actual sales under realistic conditions (including prices asked)
- (f) I don't know, I am unsure, none of the above

9. Market research, if any, for this product or service involved:

- (a) None, or casual empiricism only
- (b) Small sample not scientifically derived (with random sample etc)
- (c) Sample size and sampling method OK, but inadequate survey instrument
- (d) Good sample and good survey instrument
- (e) Excellent market research provided by a professional third party firm
- (f) I don't know, I am unsure, none of the above

10. The amount of beneficial public relations exposure this venture has received and/or is likely to receive, is:

- (a) Zero or minimal
- (b) Very small
- (c) A moderate amount
- (d) A substantial amount
- (e) A great deal
- (f) I don't know, I am unsure, none of the above

11. The amount of product redesign and/or refinement following and due to customer feedback has been:

- (a) Zero or minimal
- (b) Very small
- (c) A moderate amount
- (d) A substantial amount
- (e) A great deal
- (f) I don't know, I am unsure, none of the above

12. Actual sales of the product or service are

- (a) Expected to start once the new venture is launched
- (b) None yet, but some tentative orders (not contractually binding) have been received
- (c) Only a few units have been sold so far
- (d) A moderate volume of sales has already taken place
- (e) A substantial volume of sales has already occurred
- (f) I don't know, I am unsure, none of the above

13. The cost of launching the new product or service will be:

- (a) Very expensive for what is achieved in terms of sales
- (b) Expensive but such expense is probably necessary in this case
- (c) Moderately expensive but the money will be well spent
- (d) Relatively inexpensive
- (e) Cheap and easy
- (f) I don't know, I am unsure, none of the above

14. Customers, when considering this new product or service, will

- (a) Be deterred for reasons of both quality risk (the risk that quality will not live up to the supplier's claims) and switching costs (the customer's costs associated with abandoning their investment in an earlier technology)
- (b) Be deterred from trying it out, due mainly to high switching costs
- (c) Be deterred from trying it out, due mainly to high quality risk
- (d) Be able to test its quality in a relative inexpensive manner (eg free samples)

- (e) Be able to quickly and independently satisfy themselves of the quality claimed
- (f) I don't know, I am unsure, none of the above

15. When considering purchase of the new item, customers will probably:

- (a) Find it far too expensive for what it offers them
- (b) Find the price level to be somewhat high given the benefits offered
- (c) Find the price to be acceptable and representing comparable value for money
- (d) Find the price to be more than acceptable, offering good value for money
- (e) Find the price to be a bargain, offering great value for money
- (f) I don't know, I am unsure, none of the above

16. The marketing plan for the new venture

- (a) Contains basic flaws and is not likely to work well in reality
- (b) Is not yet articulated sufficiently by the new venture management team
- (c) Is well argued in broad concept but lacks important details
- (d) Is well thought out and is ready for introduction
- (e) Is ready for implementation and is likely to be successful
- (f) I don't know, I am unsure, none of the above

17. The top management team has proposed a business model that is:

- (a) Very rudimentary and lacks full comprehension of the business issues involved
- (b) Basically standard with very little that is innovative from a strategic viewpoint
- (c) Somewhat innovative and will give them a good start until competitors follow suit
- (d) Quite innovative and somewhat difficult for competitors to copy
- (e) Very innovative and appears likely to give them a sustainable competitive advantage
- (f) I don't know, I am unsure, none of the above

18. Management have sought, and listened to, feedback from customers and technical advisors:

- (a) Apparently hardly at all—they largely have gone their own way

- (b) To a minor degree only, such that it seems unlikely that the product or service will be a technical or market success
- (c) To a significant extent, but some doubts remain about technical or market suitability
- (d) To a substantial extent, such that the product or service will probably succeed
- (e) A great deal, such that the product or services is well developed technically and appears to be market ready
- (f) I don't know, I am unsure, none of the above

19. The management team have found a group of technical and business advisors and/or mentors who have, and will continue to, support their judgement and decision-making:

- (a) No, there is not (a sufficient) advisory group in place
- (b) Yes, but the group lacks important technical or business knowledge
- (c) Yes, but the group is not extraordinary (rivals could have similar advisory panels)
- (d) Yes, and the advisory group seems to contain some extraordinary people
- (e) Yes, and the advisory group is an extraordinary collection of talent
- (f) I don't know, I am unsure, none of the above

20. The top management team of the proposed new venture is best characterised as:

- (a) A solo entrepreneur with appropriate technical knowledge but insufficient management training or experience in this industry
- (b) A solo entrepreneur with substantial technical and business knowledge and experience in this industry
- (c) A team of two or more individuals who cover some important areas of management expertise but who lack qualifications or experience in other important areas
- (d) A team of individuals whose skills and experience nicely complement each other's expertise, with no areas of management skill or experience missing
- (e) A team of individuals with complementary skills and experience, no gaps in required knowledge or experience, and who have prior business start-up experience
- (f) I don't know, I am unsure, none of the above

21. The top management team for this venture appear (to an external party):

- (a) To be trying to 'get rich quick' and have little other apparent motivation
- (b) Committed to this venture and willing to work hard to achieve success
- (c) Strongly motivated to the success of this venture, having made substantial financial and personal sacrifices to date
- (d) Very strongly committed and motivated, but do not appear willing to 'bet their farm' on it (i.e. undertake additional personal debt or risk loss of their assets)
- (e) Very strongly committed and motivated, and have made substantial financial commitment (hurt money) to the next stage of the new venture's development
- (f) I don't know, I am unsure, none of the above

22. The business plan for this new venture:

- (a) Looks like a 'rush job' and does not convince the reader that management understands all the management or business issues involved
- (b) Is reasonably well crafted but is overly optimistic and seems to ignore major risks facing the business
- (c) Is very well crafted and presented, but covers up or ignores one or more potentially major problems for the firm's initial and/or ongoing success
- (d) Is very well argued and presented, and answered most of the questions I would have about this business
- (e) Is very well done, and gives me great confidence that the management team knows their business well and understand the issues likely to confront it
- (f) I don't know, I am unsure, none of the above

23. The current owners of this business seem (to an external observer) to be:

- (a) Greedy and over-protective of their share of equity in the potential new business
- (b) Reluctant to give away any substantial share of equity in the business
- (c) Willing to give away equity only on the basis of financial contributions made
- (d) Recognize that 'smart money' (investors with knowledge and contacts) is worth more than 'dumb money' (passive uninformed investors).

(e) Aware that dilution of their equity is inevitable and beneficial to them, as a smaller share of a larger pie is better than a large share of a small pie

(f) I don't know, I am unsure, none of the above

24. On a personal level, the management team of the proposed new venture:

(a) Seem like a cranky bunch of people, including prima donnas and over-inflated egos

(b) Seem like they might present major difficulties in 'getting along with' investors

(c) Seem like they would try to build a cooperative relationship with investors

(d) Seem like they would be able to have a pleasant and cooperative relationship with the investors as long as things go well

(e) Seem like they would be able to work together with the investors as joint owners of the business in a cooperative and open manner

(f) I don't know, I am unsure, none of the above

25. The management team of the new venture that is seeking funding:

(a) Seem like they would be reluctant to receive advice or suggestions from the investor

(b) Seem like they would listen to advice but probably go their own way regardless

(c) Seem like they would listen to advice and thoughtfully consider it

(d) Seem like they would seek advice from investors and advisors, and would incorporate it into their decisions if they thought it was good advice

(e) Seem like they would seek and take advice well, and would actually change their minds if presented with a strong case to do so

(f) I don't know, I am unsure, none of the above

26. On a scale of 1-10, I would rate this business plan (as a document that communicates the excitement and viability of this new venture) as \_\_\_\_\_

## 7.2 Questionnaire and test

Part 1:

- What are the three most important criteria you use during the selection of a possible investment?
- What are the three most commonly points on which you reject a possible investment?
- What is investor readiness?
- Could you give your opinion and insights on the following statement: investor readiness is the match between the product/technology, the market, and the fit of the management team with the start-up?

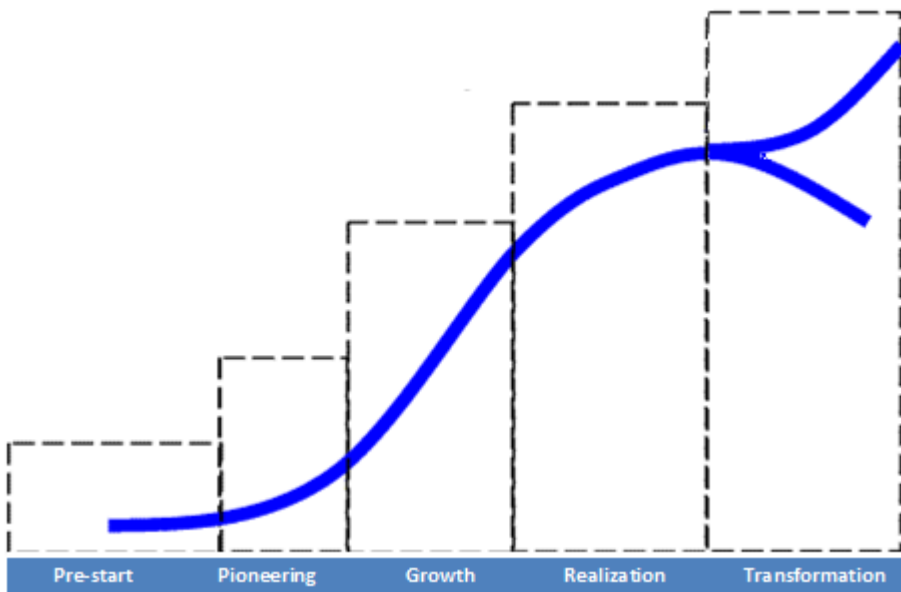
Part 2:

- Please read carefully the following five phases and their main activities before continuing.
  - Please pick the four most important characteristics for entrepreneurs/management teams for each of the five phases
  - Do you miss a certain characteristic for one of the five phases?
  - Why did you pick those four criteria?

Company life cycle phase:

- Pre-start phase main activity; thinking
  - Developing a technology/product
  - Writing a business plan
  - Obtaining capital
  - Building a venture
- Pioneering phase main activity; doing
  - Commercializing technology/product
  - Executing the business plan
  - Building the foundations of the venture
- Growth phase main activity; developing and expending
  - Obtaining growth capital
  - Building the organisational structure
  - Manage the team
  - Re-evaluating the market and the vision
- Realization phase main activity; realizing
  - Controlling the venture
    - Rules
    - Procedures

- Systems
  - Maintain growth momentum and market position
- Transformation phase main activity; remaining innovative
  - Restructuring of the venture
    - Aim for efficiency and effectiveness
    - Aim on profit
  - Focus again on innovation
    - Second generation technology/product





Traits	Pre-start	Pioneering	Growth	Realization	Transformation
<b>Business orientation &amp; Perseverance</b>					
<b>Communication skills &amp; Customer Orientated</b>					
<b>Independent &amp; Leadership</b>					
<b>Problem analytical &amp; Planning and Organizing</b>					
<b>Judgement &amp; Decisiveness</b>					
<b>Long term vision &amp; Persuasiveness</b>					
<b>Innovate &amp; Cooperation</b>					
<b>Interpersonal sensitivity &amp; Multicultural awareness</b>					
<b>Initiative &amp; Steering</b>					
<b>Flexibility &amp; Relationship Building</b>					
<b>Commitment &amp; Compassion</b>					
<b>Goal Setting &amp; Discipline</b>					

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