

Master Business Administration – Innovation & Entrepreneurship

# Graduation Thesis

*Recognition and development of the entrepreneurial opportunity by novice entrepreneurs: Influenced by their background?*

Wim Faassen



**Document title**

**Recognition and development of the entrepreneurial opportunity by novice entrepreneurs: Influenced by their background?**

**Status**

Final version

**Occasion**

Master Business Administration  
Track: Innovation & entrepreneurship  
University of Twente

**Date Colloquium**

31 August 2010

**Author**

Wim Faassen  
WimFaassen@gmail.com  
S0043400

**Graduation committee:**

**Supervisor**

Dr. Ir. J. Kraaijenbrink  
Twente University, Faculty Management and Governance  
Dutch Institute for Knowledge Intensive Entrepreneurship (NIKOS)

**Supervisor**

Drs. P. Blik  
Twente University, Faculty Management and Governance  
Dutch Institute for Knowledge Intensive Entrepreneurship (NIKOS)





# Management Summary

---

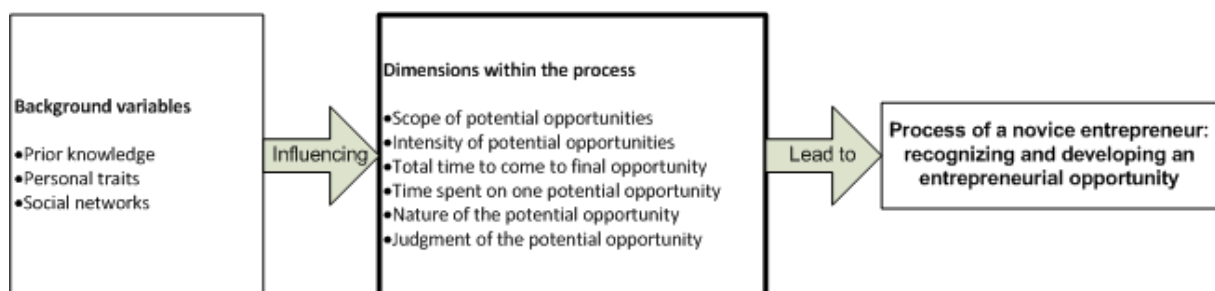
## Introduction

Opportunity recognition and development is the first and therefore the key step within the entrepreneurial process before an entrepreneur starts exploiting the entrepreneurial opportunity. The type of background of an entrepreneur can influence this process. Most of the literature focuses on experienced entrepreneurs which consequently means that, novice (first time) entrepreneurs are less taken into account. However, many differences can be identified between these novice entrepreneurs many differences can be identified. Therefore, the aim in the this study is to:

***Identify the influence of differences in backgrounds of novice entrepreneurs on the process of recognition and development of the entrepreneurial opportunity.***

## Theoretical framework

To begin with, a framework has been build from the existing literature. This theoretical framework identified different background variables and dimensions within the process of recognition and development of the entrepreneurial opportunity. The dimensions within this process describe the approach of the novice entrepreneurs. The background variables may influence these dimensions. An outline of the theoretical framework is presented below.



## Methodology

In order to identify the influence of the background variable and the dimensions case study research has been executed with five different case studies. These novice entrepreneurs are participants of Venture Lab Twente (VLT), a support program for entrepreneurs. The novice entrepreneurs were selected on their differences in background. Within the five case studies, the background variables of the novice entrepreneurs were identified and consecutively, their influence on the process of recognition and development of the entrepreneurial opportunity was analysed. Case study data was collected by semi-structured interviews, the Curriculum Vitae's (CV's) of the novice entrepreneurs, the 'big five' factor model collected by VLT and a network tool to construct the social networks of the entrepreneurs. In the semi-structured interviews, the processes of the novice entrepreneurs could be analysed while the entrepreneurs reported on their process themselves. With these thorough descriptions of the process the influence of the background variables was analysed.

## Results

The case studies identified a direct influence between prior knowledge and the dimensions: scope, intensity, time spent and the nature of the potential opportunities. An indirect influence was recognised between prior knowledge and social networks and the judgment of the opportunities. The case studies identified a direct influence between personal traits and the dimensions: scope, time spent and the nature of the potential opportunities. An indirect influence was recognised as well between personal traits and social networks and

the judgment of the opportunities. Social networks influence the scope of the potential opportunities. Furthermore, in relation with prior knowledge and personal traits, social networks influence the judgment of the potential opportunities as well.

There are three types of **prior knowledge**, including 'fascination & fun', 'varied business and working experience' and 'educational activities'. Prior knowledge has the biggest influence on the process of recognition and development. Varied business and working experience creates the cognitive framework by which novice entrepreneurs recognise and develop their entrepreneurial opportunity. Novice entrepreneurs without extensive varied business and working experience base their cognitive framework on educational activities. These educational activities are often less specialised, which leads to a broader scope and a higher intensity of potential opportunities. For novice entrepreneurs with extensive varied business and working experience, it is difficult to move away from the branch of industry in which they are already working. This causes a lower intensity of potential opportunities as well. In addition, the richness of a cognitive framework that is based on educational activities is lower. As a result, the novice entrepreneurs with less varied business and working experience spent more time on different potential opportunities. Furthermore, fascination is a very important driver and it becomes stronger as novice entrepreneurs collect more life experience. It limits their scope and can influence the nature of the potential opportunities within the process of recognition and development.

**Personal traits** are measured by the 'big-five factors': extraversion, neuroticism, agreeableness, conscientiousness and openness to experience (Goldberg, 1990). As there are many different personal traits that may be influencing the dimensions, the relations between the personal traits and the dimensions were more difficult to analyse. This has resulted in less significant relations compared with the other background variables. Derived from openness, creativity is likely to broaden the scope of potential opportunities of novice entrepreneurs. The virtuous cycle (Zahra, 2008) can be activated, which increases the chance of finding the entrepreneurial opportunity. Furthermore, novice entrepreneurs who score low on agreeableness are mainly focussed on their own interest. Consequently, their focus may be less on solving a customer's problem, which is one of the attributes of the dimension nature of the opportunity. Finally, insecurity can increase the time spent on one potential opportunity, which postpones the decision whether or not to continue with the opportunity.

The **social networks** were constructed by the novice entrepreneurs themselves. Diversity and trustworthiness of the networks were the focus of the analyses. For novice entrepreneurs with extensive varied business and working experience it is difficult to build a diverse network outside their branches of industry. Younger entrepreneurs with limited varied business and working experience have more diverse social networks. This diversity creates possibilities to collect information and develop the opportunity within a broad network. Therefore it enlarges the scope of recognition and development of the entrepreneurial opportunity. Social networks are influenced by prior knowledge and personal traits as well. Novice entrepreneurs use their social network more as a sounding board because of their insecurity and limited experience. A positive assessment or advice from others is important to these novice entrepreneurs, which is an attribute of the dimension judgment of the potential opportunity. The novice entrepreneurs who are more secure or those having an extensive varied business and working experience use their social networks more to find potential partners in the development of their business.

## **Conclusion**

The background variables influence the process of recognition and development of the entrepreneurial opportunity of a novice entrepreneur in many different ways as described above. Prior knowledge has the biggest influence within the process and its dimensions followed by social networks and personal traits.

## Table of Content

Management Summary.....	5
Table of Content.....	7
Preface .....	9
1. Introduction.....	11
1.1. Research background .....	11
1.2. Research objective.....	12
1.3. Relevant definitions .....	13
1.4. Research boundaries .....	14
1.4.1. Type of research .....	14
1.4.2. Limitations .....	15
1.4.3. Research environment: Venture Lab Twente.....	15
1.4.4. Research questions.....	15
1.4.5. Research approach .....	16
2. Theoretical Framework .....	17
2.1. Dimensions of the process.....	17
2.2. Factors influencing the process .....	18
2.3. The framework .....	21
3. Methodology .....	23
3.1. Type of research .....	23
3.1.1. Case study research .....	23
3.1.2. Multiple cases .....	23
3.2. Data collection and analyses .....	24
3.2.1. Data collection dimensions.....	25
3.2.2. Data collection background factors .....	26
3.2.3. The interview .....	27
3.2.4. Process data to draw conclusions.....	28
4. Case study analyses.....	29
4.1. Mark .....	29
4.1.1. Dimensions within the process of Mark .....	29
4.1.2. Background variables Mark .....	31
4.1.3. Summary Mark.....	32
4.2. Ward .....	32
4.2.1. Dimensions within the process of Ward .....	32
4.2.2. Background variables Ward .....	34
4.2.3. Summary Ward .....	36
4.3. Douwe.....	36

4.3.1.	Dimensions within the process of Douwe .....	36
4.3.2.	Background variables Douwe .....	38
4.3.3.	Summary Douwe.....	39
4.4.	Fred.....	39
4.4.1.	Dimensions within the process of Fred.....	40
4.4.2.	Background variables Fred.....	41
4.4.3.	Summary Fred.....	42
4.5.	Henk.....	42
4.5.1.	Dimensions within the process of Henk .....	43
4.5.2.	Background variables Henk.....	44
4.5.3.	Summary Henk.....	45
4.6.	Summary case studies .....	45
5.	Findings .....	47
5.1.	Influence on the scope of the potential opportunities .....	47
5.2.	Influence on the intensity of the potential opportunities .....	49
5.3.	Influence on the total time spent to come to the final opportunity .....	49
5.4.	Influence on the time spent on the potential opportunities.....	50
5.5.	Influence on the nature of the potential opportunities .....	51
5.6.	Influence on the judgment of the potential opportunities .....	51
5.7.	Overview relations background variables and dimensions .....	53
6.	Conclusions.....	55
6.1.	Conclusion .....	55
6.2.	Discussion .....	58
6.3.	Recommendations.....	59
6.4.	Implications for further research.....	60
	References .....	63
	Annex .....	65
	Annex 1: Data collection Dimensions of the process .....	65
	Annex 2: Data collection background variables.....	66
	Annex 3: Survey Big Five .....	67
	Annex 4: Survey social network.....	68
	Annex 5: Interview script .....	70



# Preface

---

In front of you lies my report titled **'Recognition and development of the entrepreneurial opportunity by novice entrepreneurs: Influenced by their background?'** I executed this research in order to finish my master Business Administration at the University of Twente. Within this master I specialised in the field of Innovation & Entrepreneurship. Although both fields are related with each other and very interesting, within my master thesis I focused on entrepreneurship.

Entrepreneurship intrigues me already for a long time. As a farmer's son I always had the idea once to become an entrepreneur myself. The desire to become an entrepreneur became so strong I decided to participate with the program Venture Lab Twente (VLT) offered. In October I started with VLT and my active search for an entrepreneurial opportunity. Although I still had to graduate, the university - and specially NIKOS (Dutch institute for knowledge intensive entrepreneurship) - gave me the chance to follow the training and support program VLT offered. The process I went through as a novice entrepreneur, and with me a few others within VLT was such an interesting process we decided to translate this into my graduation assignment. I want to thank NIKOS for giving me the opportunity to finish my graduation thesis while working on my own entrepreneurial opportunity.

Without the cooperation of four other novice entrepreneurs this research wouldn't be possible. I'd like to thank these novice entrepreneurs for their time, dedication and possibility to use their data. I wish them good luck with the exploitation of their entrepreneurial opportunities. For their own discretion they have kept anonymous.

Most of all I want to thank both my supervisors Jeroen and Patrick for their guidance and feedback during the complete research. Especially the patience they had when I was dividing my time more towards developing my entrepreneurial opportunities. Without your cooperation and deadlines I wouldn't have finished this within this academic year.

I want to wish you as a reader a pleasant journey throughout the processes of recognition and development of five novice entrepreneurs towards their entrepreneurial opportunity. As novice entrepreneur, coach or potential novice entrepreneur it can prepare you to go through, or guide somebody through this interesting process.

Regards,

Wim Faassen



# 1. Introduction

---

Entrepreneurs are often seen as the engines of economic systems. Entrepreneurs facilitate employment, innovate, invest and develop new technologies, and are willing to take risks. The entrepreneurial process starts with the entrepreneur and the opportunity the entrepreneur has to recognise and develop from where the exploitation of the opportunity starts. This process is difficult, exciting and interesting, especially for novice entrepreneurs. This research focuses on the first part of the entrepreneurial process where the novice entrepreneur is in the phase of recognising and developing his or her entrepreneurial opportunity. Since the researcher himself is a novice entrepreneur in his exploration phase, this master thesis combines practical experience and scientific research. This introductory chapter includes the research background, research objective, relevant definitions and boundaries of the research.

## 1.1. Research background

Entrepreneurship can build on a long historical knowledge base, which has been very important for today's view on entrepreneurship. Where the subject of entrepreneurship was first part of economic and social science research, later its importance is admitted by economists, politicians and other practitioners of social sciences (Van Praag, 1999; Sarasvathy, 2002).

Entrepreneurs are important for economic development by creating new firms as well as by improving and applying innovations. One of the most important scholars in entrepreneurship research, Joseph Schumpeter (1934), was the first to treat innovation as an endogenous process. Schumpeter regards the entrepreneur as an innovator and a leader. The entrepreneur is always seeking for new opportunities or combinations in the market where a new equilibrium is created in economy. On the other hand, Kirzner (1973) does not consider market economy as equilibrium. From his view, there is always space for identifying opportunities for pure profit because of disequilibrium. Kirzner's entrepreneur does not require any special abilities or personal traits. However, he needs the knowledge to perceive profit opportunities in an earlier stage than others. Both scholars were founders of entrepreneurship literature and had an important share in defining the entrepreneurial opportunities. Traditional entrepreneurship research has mostly focused on the attributes of entrepreneurship and the success factors related to new venture performance. More recently, the field's focus has shifted towards the study of entrepreneurial opportunities (Shane & Venkataraman, 2000; Busenitz et al., 2003). As the recognition of entrepreneurial opportunities is viewed as the first and more important, as the key step in the entrepreneurial process, it is a common subject in entrepreneurial research (Shane & Venkataraman, 2000; Ardichvili et al., 2003; Baron, 2006; Corbett, 2007).

In the literature about discovering, recognising or creating an entrepreneurial opportunity the individual entrepreneur has a central role. Studies' main interests are the question why a specific person recognises an opportunity and how the process evolves. According to Shane & Venkataraman (2000) there are two important factors to recognise opportunities where they distinguish (1) the possession of prior information and (2) the cognitive properties necessary to value it. In Shane's nexus theory, the main focus is on why and how the individual discovers the entrepreneurial opportunities. Other scholars have defined the important aspects of recognition differently. Baron (2006) identified patterns from a cognitive framework where active search, alertness and prior knowledge are important. Social networks and personal traits like creativity (Ardichvili et al., 2003) and intelligence (Baron & Ensley, 2006) are mentioned as important as well. Also the ability to use acquired knowledge (Corbett, 2007), the background – whereas the father was an entrepreneur- or environmental influences like getting fired from their job or incentives from the government (Sarasvathy, 2008) can influence the process of why the entrepreneur perceives entrepreneurial opportunities or not. Opportunities rise in different ways – it can be changes in the value chain, exogenous shocks, difference between supply and demand, or change initiated by the actor his or herself (Eckhardt & Shane, 2003)- where

the individual, the entrepreneur with all his or her luggage plays a crucial, central role. All these aspects contribute to the understanding of opportunity recognition, but do not give a clear view on the process of coming to an entrepreneurial opportunity. Every research focuses on a single aspect of the process, which can cause misunderstanding on major concepts (Ardichvili et al., 2003). Within this research these concepts are integrated into one process.

Entrepreneurs try to recognise and develop entrepreneurial opportunities where the background of the entrepreneur influences this process. A distinction is often made between experienced and novice entrepreneurs where the experienced entrepreneurs have set up several new ventures. Other experiences or background variables are not taken into account. Theory on entrepreneurial opportunities is build by executing empirical research on experienced entrepreneurs, successful as well as failure cases. By researching these experienced entrepreneurs the scholars have been able to identify key issues in identifying an entrepreneurial opportunity. Nevertheless, research on novice entrepreneurs instead of experienced entrepreneurs is rather unclear and underexposed, with some small exceptions. Dew et al. (2009) specifically focus on the decision making process of expert and novice entrepreneurs where the novices are represented by a group of MBA students (no real novice entrepreneurs) and the entrepreneurial opportunity is underexposed. Baron & Ensley (2006) make a comparison between novice and experienced entrepreneurs where their cognitive representations of the essential nature –prototypes- are compared in relation to opportunity recognition. The experienced entrepreneurs are more concerned with factors and conditions related to actually starting and running the new venture. In comparing the novice and experienced entrepreneurs in these researches the focus is on the differences in experience of setting up a new venture. This comparison neglects other background variables of a novice entrepreneur, which probably have influence on the process of recognition of the entrepreneurial opportunity because experience in setting up a company also affects this process. Differences in the background like working experience, age or education of the entrepreneur could influence the process of opportunity recognition. Differences between novice entrepreneurs are not taken into account where, within existing comparisons, the scholars only focus on the years of experience as an entrepreneur. When novice entrepreneurs are compared on their process of recognising an entrepreneurial opportunity there probably are many differences between the novices, which affects the way of finding an entrepreneurial opportunity. In this research it is elaborated how novice entrepreneurs recognises their entrepreneurial opportunity projected against their background.

## **1.2. Research objective**

Within the process of opportunity recognition and development a lot of factors are defined which are of influence for entrepreneurs when they are going through this process. This literature is mostly based on researching experienced entrepreneurs where novice entrepreneurs are not taken into account. Between these novice entrepreneurs different backgrounds can be identified which possible influence the process of recognition and development of the entrepreneurial opportunity. Therefore the research objective is formulated as:

### **Scientific relevance**

***Identify the influence of differences in backgrounds of novice entrepreneurs on the process of recognition and development of the entrepreneurial opportunity.***

Where the research field of entrepreneurship shifted towards an increased interest for the entrepreneurial opportunity, scholars not paid much attention on the novice entrepreneur. As described in the research background there is a lack of research on the process of recognising and developing the entrepreneurial opportunity from a novice entrepreneur. Baron and Ensley (2006) clearly identify differences between experienced and novice entrepreneurs like the focus on the feasibility of the opportunity compared to the newness where the experienced entrepreneurs achieve better results. The experienced entrepreneurs

considered are older than the novice entrepreneurs, which implicates more experience within several areas. In the research of Dew et al. (2009) this limitation is set as well, where besides the novice entrepreneurs were much younger, they were not real novices but MBA students representing novices. Within existing literature novice entrepreneurs are not compared yet with each other focussing on the background of the entrepreneur. Novice entrepreneurs possess a different background, or cognitive framework, which influences their process of opportunity recognition and development. This research provides a contribution towards this lack of research and therefore a contribution towards the field of entrepreneurship and scientific relevant.

### **Practical relevance**

This research is relevant in practice for novice entrepreneurs and coaches of novice entrepreneurs who search their entrepreneurial opportunity. The outcomes of the research can guide them to identify which direction they can go and how this influences their process. Venture Lab Twente - a business development and support program for entrepreneurs – can use this as a guide for new participant and for the coaches of these participants. By identifying the background variables of the novice entrepreneurs they can prepare for the consequences and were necessary guide them in the right direction. As the author analyses his own entrepreneurial process and the process of other participants within Venture Lab Twente as well, for these participants the research can be very useful to understand why things happened. During the data collection period it can be an eye opener for them as well when they are in the middle of their process.

### **1.3. Relevant definitions**

In this section the most relevant definitions are defined in order to avoid misunderstandings and have a clear view on the opinions of different scholars.

#### **The entrepreneurial opportunity**

There is not one clear definition in literature about the entrepreneurial opportunity (EO) and how to discover, recognise or create it. Shane & Venkataraman (2000) use a terminology of Casson where the entrepreneurial opportunity is defined as *'those situations in which new goods, services, raw materials, and organising methods can be introduced and sold at greater than their cost of production'*. They extend it by adding *'the discovery of new means-ends relationships'*. Focusing more on the newness of the opportunity, Baron (2006) defines the opportunity as *'perceived means of generating economic value that previously has not been exploited and is not currently being exploited by others'*. Based on Venkataraman's work, Sarasvathy (2002) describes the entrepreneurial opportunity as *'a set of ideas, beliefs and actions that enable the creation of future goods and services in the absence of current markets for them'*. For this research the definition of Sarasvathy is addressed most suitable because it includes the action, which has to be executed to make it a real opportunity. In sum the entrepreneurial opportunity consists of (Sarasvathy, 2002: 4):

1. New idea(s) or invention(s) that may or may not lead to the achievement of one or more economic ends that become possible through those ideas or inventions;
2. Beliefs about things favourable to the achievement of those ends;
3. Actions that implement those ends through specific new economic artefacts (goods, services, new firms, markets etc.)

#### **The entrepreneurial process**

In entrepreneurship literature discussions are continuing about what entrepreneurship really contains and what should be part of the entrepreneurial process (Davidsson, 2004). In his book, Davidsson (2004) distinguishes the discovery of an opportunity and the exploitation of this opportunity. Shane & Venkataraman (2000) define the field of entrepreneurship as *'the scholarly examination of how, by whom, and with what effects opportunities to create future goods and services are discovered, evaluated, and exploited.'*

*Consequently, the field involves the study of sources of opportunities; the process of discovery, evaluation, and exploitation of opportunities; and the set of individuals who discover, evaluate, and exploit them'* (2000: 218), where they also make the distinction between discovery and exploitation. Other scholars make a clear separation between opportunity recognition, opportunity preparation and opportunity exploitation (Groen et al., 2008) or terms that can be used interchangeable like discovery, creation and execution. But is there a difference between the terminologies or does it mention the same? Sarasvathy (2002) makes a distinction between opportunity recognition, discovery and creation whereas respectively both supply and demand are known, only one side is known, or where both sides are unknown. In this research there is no distinction between what is known and unknown at the supply or demand side because the focus is on every entrepreneurial opportunity in general so this definition is ignored. Opportunity recognition is used instead of discovery or creation because in most literature this is used for the first step in the process. But as already stated in the definition of the entrepreneurial opportunity and in the definition of Shane & Venkataraman (2000) it is not only the idea or invention and the belief which can be recognised, but also the action how to implement the recognised opportunity. Opportunity recognition is only the initial step in a continuing process, and is distinct both from detailed evaluation of the feasibility and potential economic value of identified opportunities and from active steps to develop through new ventures (Baron, 2006). Where elements of opportunities may be recognised, opportunities are made, not found (Ardichvili et al., 2003). To be as complete as possible this research is about both the *recognition and development of an entrepreneurial opportunity* where it can be described as *'the cognitive process through which individuals conclude that they have identified an opportunity'* (Baron, 2006: 107).

### **The novice entrepreneur**

The novice and experienced entrepreneur differ in the amount of experience in being an entrepreneur. A novice entrepreneur is a person, which is setting up a company for the first time for his or her own interest. The novice entrepreneur can have a lot of working or other experience but is really a first time entrepreneur. An experienced entrepreneur is a person with at least one time (mostly more) experience with setting up a company for own interest.

### **The background of an entrepreneur**

Every individual is formed by different backgrounds and experiences. For instance a novice entrepreneur can be very experienced in the area of sustainable energy because he worked at such a company for ten years. Another person can have experience with how to deal with uncertainty because his or her parents owned a company. Again another person has a master's degree, whereas somebody else learned on the job.

## **1.4. Research boundaries**

To make clear what the research is about and is not about, within this section the type of research, the limitations, the research environment, the research questions and the approach is defined.

### **1.4.1. Type of research**

This research is an explorative research. Exploratory studies try to discover future research tasks with loose structures. The loose structure is guided with research questions. To answer the research questions and reach the objective of the research a multiple case study is executed. This qualitative research method collects all necessary data to answer the research questions. Where this research has an exploratory objective, it can be used as a start for an empirical research in which the constructed findings can be tested in a quantitative study. This research uses the most preferred strategy for case study research where it relies on theoretical propositions, which implicate research questions, review of the literature and generate new insights (Yin, 1994). In this research existing literature is used as a basis to start identifying how the process of novice entrepreneurs to recognise and develop their entrepreneurial opportunity look like and which background factors could affect this process. By researching several case studies the findings of the cases are compared to

the findings of the existing literature, where a complete model is constructed. The research can be seen as a deductive study but with an inductive element because from the case studies theory is constructed.

#### **1.4.2. Limitations**

As for almost every research, limitations must be set to align the size of the research within the time and resources available. Because this research is executed as a graduation assignment for a master degree Business Administration there is a size limitation to finish it within a timeframe set by the assignment.

To limit the size of the research only a qualitative research is executed where it is not extended by a quantitative, empirical test of the findings of the case studies. This would take too much time. The qualitative analyses of five case studies provide a solid foundation for an empirical study to be able to generalise it.

The entrepreneurial process for entrepreneurs can be divided into the exploration and exploitation phase. This research limits on the exploration phase. More specific it focuses on the recognition and development of the entrepreneurial opportunity of the novice entrepreneur. The exploitation phase is not taken into account, as the experienced entrepreneur is not taken into account as well.

#### **1.4.3. Research environment: Venture Lab Twente**

The research is executed within Venture Lab Twente (VLT). VLT is a support program for novice entrepreneurs to help them in all possible ways to develop their own business. This support contains training, personal coaching, working facilities and access to networks and technology. Besides this support VLT is a broad research facility within the field of entrepreneurship. Three types of entrepreneurs are participating in this program. The first group starts without a business idea and therefore start in the process of recognise and develop their entrepreneurial opportunity. The second and third type of participants already has a business idea or company and exploring this. The researcher is part of the first group of novice entrepreneurs where he is able to observe himself and the other participants very closely. Within this group of five novice entrepreneurs the research is executed.

#### **1.4.4. Research questions**

The main research question of the research following on the objective of the research is

- ***What is the influence of differences in backgrounds on the process of recognition and development of the entrepreneurial opportunity of novice entrepreneurs?***

To answer this main research question three sub-research questions are formulated which must be answered before the main research question can be answered. Below the sub-research questions are introduced.

Within the main research question there are two domains, which must be determined in more detail before this question can be answered. The first domain contains the development of an entrepreneurial opportunity whereas it is important to know which dimensions must be taken into account within this process. The dimensions within this process describe the approach on how the novice entrepreneurs recognise and develop their entrepreneurial opportunities and how they conclude that they found an entrepreneurial opportunity. Based on existing literature on how entrepreneurs –novice as well as experienced - recognise and develop entrepreneurial opportunities these dimensions are identified and the following question must be answered:

1. *Which dimensions describe the approach of a novice entrepreneur within the process of opportunity recognition and development?*

The second domain within the main research question is the different background variables, which can have influence on the recognition and development of the entrepreneurial opportunity of the novice entrepreneur. These background variables are determined from literature as well. The second question in the research is:

2. *Which background variables may have influence on the process of recognising and developing an entrepreneurial opportunity?*

Now both domains are identified it has to be determined if there are relationships between these domains. By researching a group of novice entrepreneurs these relationships - if they are there- are identified and the following question answered:

3. *How do background variables of novice entrepreneurs affect the dimensions within the process of recognition and development of the entrepreneurial opportunity?*

#### **1.4.5. Research approach**

After answering these questions the main research question can be answered. To answer the main research question and its sub-research questions a theoretical framework must be constructed in the second chapter. Based on this framework the research approach is elaborated in more detail based on the chosen methodology in chapter three. Based on the detailed description in chapter three; the analysis is done in chapter four; the findings elaborated in chapter five and the conclusions drawn in chapter six.



## 2. Theoretical Framework

---

In this chapter the framework to use during the research is build along existing theory. As the research is about the process of recognition and development of entrepreneurial opportunities this process is elaborated along six different dimensions in section 2.1. The background variables that influence this process are elaborated in section 2.2. Finally the framework is presented in section 2.3.

### 2.1. Dimensions of the process

To understand the process of recognition and development of the entrepreneurial opportunity of novice entrepreneurs it is important to identify the different dimensions within this process. Through these dimensions the approaches of the novice entrepreneurs within such a process can be described in detail. Every dimension describes a part of the process where all dimension together give an overview of the approach of novice entrepreneurs within their process. Based on existing literature six different dimensions are identified which describes the direction of the process and its potential opportunities, the depth of the process and the emphasis of the novice entrepreneurs within the process. Below the dimensions are described in detail.

#### Dimension 1: Scope of potential opportunities

Every entrepreneur has a different background and a different approach to recognise and develop his or her entrepreneurial opportunity and recognises different opportunities. One novice entrepreneur is searching in a specific area because of specific prior knowledge in this area, others have a broader scope because they are less specialised or searching for challenges outside their normal scope. According to Baron (2006) entrepreneurs use their cognitive framework they have acquired through the years to recognise opportunities between unrelated events or trends. The ability to recognise these patterns from their cognitive framework between these events leads to entrepreneurial opportunities. This cognitive framework is developed through background variables. The cognitive framework a person develops, leads to different types of opportunities within a certain scope. Zahra (2008) distinguishes opportunities can act in a narrow or broad scope depending on the type of search activity. Within an already existing company a distinction is made between formal and informal search, which lead respectively to a narrow or broad scope. Because the focus of this research is not on the existing company but on the novice entrepreneurs acting from their cognitive framework formal and informal search is not taken into account. This leads towards the first dimension namely *the scope of potential opportunities of a novice entrepreneur*, which is defined as the total numbers of branches of industry the different potential opportunities are present in. This scope can vary from almost no boundaries (many different branches of industry) to a very narrow scope on a specific subject, expertise or technology within a certain branch of industry. In the recognition and development process of the novice entrepreneurs they describe different entrepreneurial opportunities. Depending on the type of opportunity it can be categorised into a branch of industry. When novice entrepreneurs have opportunities in many different branches of industry they have a broad scope whereas everything is focussed in one branch the scope is narrow.

#### Dimension 2: Intensity of potential opportunities

Related to the scope of the potential opportunities of a novice entrepreneur, besides the number of branches of industry, the number of different potential opportunities a novice entrepreneur recognize describes his or her process. This dimension is called the *intensity of the potential opportunities* and is defined as the total number of potential opportunities the novice entrepreneurs recognised and developed during their process. Where *discovery and creation sometimes form a virtuous and dynamic cycle where entrepreneurial opportunities that have been discovered at a point in time become a platform for the creation of a myriad of additional opportunities at a later time* (Zahra, 2008: 243-244), this leads to a different intensity of founded potential entrepreneurial opportunities. Where the scope can be different for every novice entrepreneur the intensity can be different as well. The intensity can show differences between novice entrepreneurs in relation

with their background. Within the scope already mentioned as the first dimension every novice entrepreneur can have a different intensity where one entrepreneur has three potential opportunities compared to another with twenty potential opportunities. When a novice entrepreneur is engaged in active search and is creative, probably more opportunities come up in the stage of searching for it.

### **Dimension 3: Total time to come to the final opportunity**

In the process of recognition and development time also play a role. Every novice entrepreneur needs a different time period to come to his or her final opportunity. The first dimension Choi et al. (2007) identified within time is the total time from opportunity exploration towards exploitation. By rushing the exploitation phase of the entrepreneurial opportunity, entrepreneurs can realize first mover advantages. By taking more exploitation time to develop the opportunity they can acquire more knowledge and reduce ignorance. This leads to the third dimension *total time to come to the final opportunity*, which is defined as the start of the entrepreneurial process till the moment the entrepreneurial opportunity actually is exploited. The total time identifies the length of the process of the novice entrepreneurs to come to their final opportunity.

### **Dimension 4: Time spent on each opportunity**

Besides the total time to come to the final opportunity, Choi et al. (2007) identified a second dimension of time. The level of detail of exploration of every opportunity before the decision can be made if the opportunity is being exploit. Every novice entrepreneur needs a different level of detail to recognize and develop the entrepreneurial opportunity and finally judge it. The fourth dimension is *the time spent on each opportunity*, which is defined as the time a novice entrepreneur needs to recognize and develop the opportunity before judging it. The time spent describes the depth of the exploration.

### **Dimension 5: The nature of the opportunity**

Another area within the process of recognising and developing the entrepreneurial opportunity is which attributes novice entrepreneurs focus on to find and judge entrepreneurial opportunities. Baron & Ensley (2006) identified differences between novice and experienced entrepreneurs. Where the novice entrepreneurs focus more on newness or uniqueness and their gut feeling, the experienced entrepreneurs focuses more on factors and conditions directly related to actually starting and running a new venture. Examples are the ability to generate positive cash flow and meeting customer needs. This difference in degree of focus on key attributes is important in the process of recognition and development. It shows how and why an entrepreneur recognized the entrepreneurial opportunity. Therefore, the fifth dimension is *the nature of the opportunity* and is defined as the reason and motivation why the entrepreneur recognized the entrepreneurial opportunity. Key attributes within this dimension are e.g. solving a customer's problem or manageable risk.

### **Dimension 6: The judgement of the opportunity**

Besides the nature of the opportunity, Baron & Ensley (2006) identified other attributes within a different dimension. The difference in degree of focus on key attributes is also important when entrepreneurs have to make decisions and decide whether it is a suitable opportunity or not. Therefore, the sixth dimension is *the judgement of the opportunity* and is defined as the reason why entrepreneurs make decision about their entrepreneurial opportunities. To judge the opportunity key attributes e.g. are a positive assessment from others and the novelty of the opportunity. Depending on the background variables of different novice entrepreneurs these attributes act different within these dimensions as the novice and experienced entrepreneurs did in the research of Baron & Ensley.

## **2.2. Factors influencing the process**

Every novice entrepreneur is comparable in a way they all try to start their own company for the first time. Despite the comparison, novice entrepreneurs are very different in the approach of how they recognise and

develop their entrepreneurial opportunity. This depends on the background of the entrepreneur where the entrepreneur is developed into the person he or she is when starting as a novice entrepreneur.

Shane (2003) defines the two factors 'absorptive capacity' and 'cognitive processes' as factors, which influence the process of discovery. These factors are dependent on collected prior knowledge and experience, the ability to do so and the way information can be gathered. This leads to the three background variables prior knowledge, personal traits and social networks, which are elaborated below.

### **Prior knowledge**

As stated by many scholars, prior knowledge is an important aspect in recognising and developing an entrepreneurial opportunity (Baron, 2006; Ardichvili et al, 2003; Shane & Venkataraman, 2000; Shane, 2003). Prior knowledge of the market, industry and potential customers or in general the possession of the prior information necessary to identify an opportunity and the ability to value it (Shane & Venkataraman, 2000) are important to stimulate pattern recognition and the ability to convert information into opportunities. Because of the obscurity of information some people can identify opportunities and other people do not. Any given entrepreneurial opportunity is not obvious to all potential entrepreneurs, depending on the knowledge you possess.

There are three different types of prior knowledge identified relevant as background of a novice entrepreneur. The first type of prior knowledge is *fascination and fun* (Ardichvili et al, 2003) where this describes an area or domain of special interest of an entrepreneur. The entrepreneur spends a lot of effort and time learning about this 'hobby' that advances and deepens the entrepreneurs' capability in this specific area, thereby collecting extensive knowledge about this topic of interest. The second type of prior knowledge is *varied business and work experience* where knowledge is accumulated over years, while working in a certain job. Shane (2003) divides this into general business experience, functional experience, industry experience and start up experience. The job is mostly not associated with the first type of fascination and fun, but often a result of rational choices. Age also plays a role, because the older a person is, the more change he has on varied business and work experience. Shane and Khurana (2003) argue that this business and work experience is one of the most important background variables for the novice entrepreneur in founding a new venture. A third type of prior knowledge is *educational activities* an entrepreneur has taken. Education is often the basis for enhancing your knowledge on varied business and work experience.

### **Personal traits**

Within entrepreneurship research the personality of the entrepreneur is researched in many different ways. According to the individual nexus theory of Shane (2003) - besides the environment and already described prior knowledge - personal traits of the entrepreneur influence the ability to recognise and develop an opportunity. Shane describes perceptive ability, creativity and not seeing risk as important traits. Ardichvili (2003) identifies two specific personal traits which are important namely optimism and creativity which are comparable with the traits of Shane. The outside view of optimism leads to a higher propensity to see opportunities rather than threats (not seeing risks). Creativity can lead to the recognition of opportunities others do not see. A person develops this traits but it is difficult to address this to specific activities in the past. The perceptive ability is the level the entrepreneurs are able to perceive the opportunity with the information they receive.

A method to measure personal traits that is often used in organizational behaviour and psychological research (Phelan & Alder, 2005) is the five-factor model of personality, often called the 'big five'. The 'big five' characteristics developed by Goldberg (1990) are extraversion, neuroticism, agreeableness, conscientiousness and openness to experience. These five factors are a descriptive representation of the five major dispositional dimensions that include human personality. Extraversion represents the tendency to be sociable, assertive, active and directive. Agreeableness represents the tendency to be likeable, adaptable, optimistic and cooperative. Conscientiousness represents the two major factors achievement and dependability. Neuroticism

represents poor emotional adjustment and experience negative affects such as fear, anxiety, insecurity and impulsivity. Emotional stability is the opponent of neuroticism and sometimes used as well. The last big-five factor openness represents curious, creative, nonconforming and autonomous behaviour (Judge & Cable, 1997).

## **Social networks**

An important way of collecting information is via social networks. Information is important to recognise and develop the entrepreneurial opportunity. The differences of a social network influences the quality, quantity and speed of receiving information (Shane, 2003). In many papers a distinction is made between strong and weak ties. De Koning (1999) describes a more detailed network, which entrepreneurs use to evolve opportunities to gather information, think through talking and assess resources. The network exists of an entrepreneur's inner circle – the strong ties- that addresses the long term, stable relations coming from 'social' relationships and is rather a small group of people. The weak ties are defined as *people with whom there are no strong business or social ties. These people include old school or college colleagues, business associates, sporting companions, or any other acquaintances. In the context of opportunity formation, it may also include friends, if these relationships are not characterised by frequent contact in the business context* (De Koning, 1999; pp. 7). From the network of weak ties, the entrepreneur creates an action set of people to where strong ties are created specifically with business related motives to build up the venture, which is engaged into the entrepreneurial exploitation phase which is not taken into account in this research. Entrepreneurial partnership is the fourth group within the model where she describes the historical relation between entrepreneurs who build up ventures together. As this research focuses on novice entrepreneurs, this group does not exist and is not taken into account as well. In this research the focus is on the strong and weak ties and the diversity within the network.

Weak ties are often suggested as more powerful a person expects because people have many weak ties where these weak ties give many unique information (Ardichvili, 2003). This unique information is likely to be spread across a variety of people where besides the diversity, size of the network matters as well. When expanding the network the amount of non-redundant contacts are important because it enhances the change on information benefits. Contacts are redundant when they lead to the same people. A separation between non-redundant contacts are called structured holes and logically very positive for unique information (Burt, 2000). When having a diverse network with many structured holes, the chance to recognise and develop an entrepreneurial opportunity increases.

Strong ties can also be beneficial for opportunity recognition and development because these ties within the inner circle are trustworthy. The entrepreneur values the information from a strong tie as accurate which makes it possible to gain access and combine information before others (Shane, 2003). Besides this accuracy strong ties are used as a sounding board (de Koning, 1999), before sharing information with weak ties.

To what extent a novice entrepreneur is involved in social networks depends on his age, his variety of business experience, his social activities and his ability to make contact. In this research the focus is on the diversity of the network (within the weak ties with possible structural holes) and the importance of the trustworthy of the strong ties (balance between strong and weak ties).

### 2.3. The framework

The process of recognising and developing an entrepreneurial opportunity for novice entrepreneurs is now divided into six possible dimensions, which describe the approach within the process of recognition and development of the entrepreneurial opportunity. This answers the first sub-research question. These dimensions are influenced by background variables of the novice entrepreneurs themselves described above and presented in Figure 1. This answers the second research question and provides the framework necessary for the research.

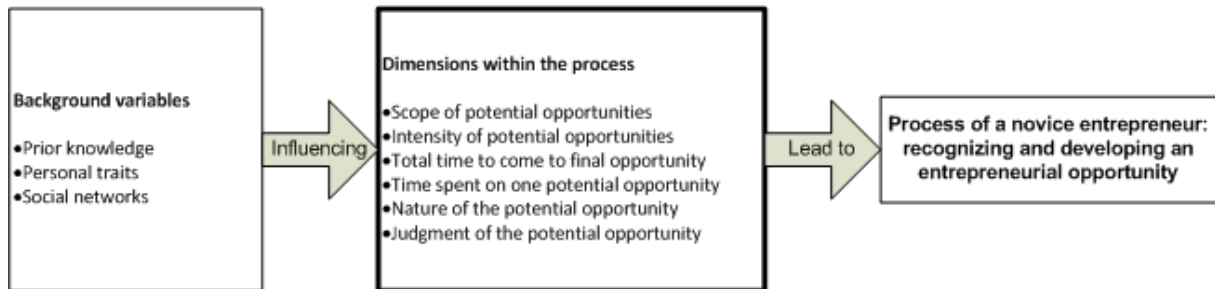


Figure 1: Process of influence on recognising and developing an entrepreneurial opportunity



## 3. Methodology

---

To be able to answer the research question a group of novice entrepreneurs is researched. In this chapter the research method is elaborated by describing the type of research, the sample group (different case studies) and the way of collecting and analysing the data.

### 3.1. Type of research

As already described in the introduction this research is an explorative research. The research is the basis of a model how novice entrepreneurs recognise and develop their entrepreneurial opportunity and how background factors influence this process. To find data to answer the research questions a qualitative research is executed with multiple case studies of six novice entrepreneurs.

Qualitative research methods are designed to help researchers understand people and what they say and do (Myers, 2009). Besides that how the process evolves and why things happen as they do (Cooper & Schindler, 2008). Qualitative research aims to achieve an in-depth understanding of a situation, where it allows a researcher to see and understand the context within which actions and decisions take place. The context helps to explain why someone, an organization or institution acted as they did (Myers, 2009, Cooper et al., 2008). There are a lot of different qualitative research methods like action research, case study research, ethnography or grounded theory. To analyse the different processes of recognising and developing an entrepreneurial opportunity of novice entrepreneurs and their backgrounds case study research is the suitable research method to explore these processes.

#### 3.1.1. Case study research

Case study research is a powerful research methodology that combines individual (and sometimes group interviews) with record analysis and observation. By analysing record data, observational data and interview data, case study research collects multiple perspectives of one single organization, situation, event, process or person (unit of analysis). Case study research can be used in exploratory as well as explanatory research. In exploratory research case study research can be used to discover relevant features, factors and issues that might apply in other similar situations or to develop novel theories. Within this research the novice entrepreneur is the unit of analysis. This generates the possibility to study the process of the novice entrepreneur towards the entrepreneurial opportunity and the influence of background factors (Yin, 1994, Cooper et al., 2008).

Case study research is separated in the two categories single case design and multiple case design. The single or multiple cases are selectively chosen and are mostly critical situations, extreme or unique cases, or revelatory cases. When resources and time are available an advantage is the replication logic of multiple cases. Within this research the resources and time are available to research multiple interesting cases, which are described in the next section. 'Each case must be carefully selected so that it either (a) predicts similar results (*a literal replication*) or (b) produces contrasting results but for predictable reasons (*a theoretical replication*)' (Yin, 1994, pp. 46). The cases within this research are chosen for the theoretical replication.

#### 3.1.2. Multiple cases

As opposed above it is important to select the cases in a multiple case study research purposively within the possibilities of the research like resources and time. The cases must be interesting for the research and have the potential to contribute to the research.

Five novice entrepreneurs are selected as case studies, which have no experience as entrepreneur with founding a new venture from an entrepreneurial opportunity. Every novice entrepreneur is participant of VLT, which makes it possible to pre-select the most interesting and suitable cases for the research and make them

approachable within the limited time of the research. They all went through the process of recognising and developing an entrepreneurial opportunity the last year, which forms the second important criteria.

As elaborated in the theoretical framework the assumption is made that the process of recognising and developing the entrepreneurial opportunity can be different for every novice entrepreneur based on the background factors. To select the novice entrepreneurs, prior knowledge is used as variable to select suitable case studies for this research. Prior knowledge is the objective to classify the novice entrepreneurs and accessible beforehand, where this is more difficult to judge with social networks and personal traits. Based on information collected beforehand by participant observation, short interviews and already collected information by researcher of VLT five novice entrepreneurs are selected with different levels of working experience. Within these different years of working experience different branches of industry are represented as well as different levels of educations. This makes every case an interesting case study for this research. An overview is presented in Table 1. For the privacy of the novice entrepreneurs the names used in this research are fictional.

Case study	Working experience	Branch of industry	Level of education
Mark	Just graduated	- Some experience in Information & communication	Master
Ward	Graduating	- Some experience in consultancy, research and other specialised business services	Master
Douwe	10 years	- Construction	Intermediate vocational education
Fred	9 years	- Financial & business services - Wholesale and retail trade, repair of motor vehicles	Bachelor
Henk	24 years	- Financial institutions - Information & Communication	Master

**Table 1: Case study descriptions**

Whereas the researcher is a novice entrepreneur himself and participant of VLT, one of the cases is the researcher himself. This gives the researcher the opportunity to closely observe and analyse his own case in detail and is able to approach and understand the other novice entrepreneurs more easily. A possible danger of this method is the objectivity of the researcher along the process. By being aware of this danger and by using objective data generated by the novice entrepreneurs themselves and VLT this is used as an advantage. Although every novice entrepreneur is considered as novice some entrepreneurs have some entrepreneurial experience. Despite these entrepreneurial experiences these entrepreneurs are considered as novice entrepreneurs and are useful because this experience was minimal and not developed their entrepreneurial skills significant. Otherwise it would not be likely to become participants of VLT.

### 3.2. Data collection and analyses

Within case study research there are several data collection techniques to get a detailed insight in the case. In this research data is collected by available documentation from the novice entrepreneur (CV) and from VLT (Participant profile survey) and by

#### Dimensions within the process

- Scope of potential opportunities
- Intensity of potential opportunities
- Total time to come to final opportunity
- Time spent on one potential opportunity
- Nature of the potential opportunity
- Judgment of the potential opportunity



filling in a network questionnaire. Besides that an interview is held with every novice entrepreneur to collect missing data. After analysing the data results are discussed with the novice entrepreneurs and possible feedback is given to check everything is understood and processed correct. In this way multiple sources of evidence are covered which is important in case study research (Yin, 1994). To analyse the data several methods are possible where coding is used in this research to categorise the data set. Yin (1994) described analysing as the most difficult aspect of doing case study research. He suggests an approach for successful analysis is to make case study data conducive to statistical analysis by coding the data. This paragraph elaborates which data (variables) are collected, how this data is collected and how it is coded to analyse it. The paragraph first describes the dimensions within the process followed by the background factors. The paragraph ends with a description on how to draw conclusions from the data.

### **3.2.1. Data collection dimensions**

The primary data collection method for gathering data in qualitative research is interviewing (Cooper et al, 2008; Meyers, 2009). Because of the size of the research group this is a suitable method to use in this research. The goal of the interview within this research is that the novice entrepreneurs show what their dimensions are in the process of recognising and developing their entrepreneurial opportunity. The novice entrepreneurs are not informed about the expected dimensions, which are predicted in this research so they are not influenced.

There are three different types of interviews namely structured, semi-structured and unstructured interviews. Semi-structured interviews generally start with some pre-formulated questions and then follow the train of thoughts of the interviewed person. The interviewer can probe and collect the data necessary for his research. There is some consistency across interviews, given that the interviewer usually starts with a similar set of questions (Cooper et al, 2008; Meyers, 2009). For this research semi-structured interviews are suitable, because it is important to let the novice entrepreneurs tell in own words their personal experience of how their approach is according to the process of recognising and developing their entrepreneurial opportunity. Besides that it gives the interviewer the possibility to probe and where necessary add important insights if these arise during the interview. To let the novice entrepreneurs tell their own objective story the novices are asked to draw their own process in a picture according to a timeline, which will visualise their thoughts. By using semi-structured interviews the results can be compared because all necessary data is collected with predefined questions, as well as the freedom the novice entrepreneurs have to tell and draw their own process.

To clearly measure and make sure all necessary data is collected during the interview about the dimension of the process every dimension is described in more detail and how this is measured. Following on how this is measured the interview script is described.

#### **Scope of potential opportunities**

The scope of potential opportunities is analysed by the differences in opportunities, which appeared in the process, probably when drawing the process. After the interview the different opportunities are coded into the different branches of industry, which are described in Table 19 in Annex 1. The amount of different branches of industry gives a view on the scope of the entrepreneurial opportunities and can vary from narrow to very wide.

#### **Intensity of potential opportunities**

The intensity of potential opportunities is measured according to the total number of potential opportunities. The potential opportunities are countable when they are really considered as serious by the novice entrepreneur. This is a subjective way of deciding what is a potential opportunity but the novice entrepreneurs themselves are the best persons to judge these potential opportunities and therefore the best way to measure.

#### **Total time to come to a final opportunity**

The total time to come to a final opportunity is addressed as a period in weeks and does not have to be coded. The starting point for the novice entrepreneur is when it seriously consider to become an entrepreneur and spent at least 8 hours a week in recognising and developing the entrepreneurial opportunity. The end point is when the business plan is finished and the novice entrepreneur starts exploiting the entrepreneurial

opportunity by investing in it. The picture drawn by the novice entrepreneur supports the scope, intensity and time needed to come to the opportunity.

#### **Time spent on one potential opportunity**

The *time spent on one potential opportunity* is identified for every opportunity mentioned by the novice entrepreneur measured in days. Beforehand it is not necessary to code. The entrepreneur gives estimation for each opportunity about the time spent on an opportunity.

#### **Nature of the opportunity**

The data about the nature of the opportunity is collected during the interview by asking on which attributes the novice entrepreneur focuses within this dimension. Baron & Ensley (2006) came up with five attributes for this dimension, which are used in this research. The nature of the opportunity is divided into the 5 attributes (1) solving a customer's problem, (2) ability to generate positive cash flow, (3) manageable risk, (4) superiority of product/service, and (5) potential to change the industry. The attributes are measured with a 5-point likert scale from not important to very important.

#### **Judgment of the opportunity**

The data about the judgment of the opportunity is collected in the same way as the nature of the opportunity described above. Baron & Ensley came up with the five attributes (1) favourable financial model, (2) positive assessments or advice from others (friends, financial advisors, and industry experts), (3) how novel the opportunity was, (4) the existence of a large untapped market, and (5) intuition or gut feeling. These attributes are measured with a 5-point likert scale as well from not important to very important. A summary of how to measure all dimensions is given in Table 19 in annex 1.

#### **3.2.2. Data collection background factors**

To analyse the backgrounds of the novice entrepreneurs, data of the three variables prior knowledge, personal traits and social networks have to be collected. For every background factor there are methods to collect the data, which are described for each of the background factors.

In qualitative research often an extensive set of data is collected where this is translated in a certain way the data is useful to analyse it. Different as in quantitative datasets it is less straightforward. To make the data collected meaningful and manageable coding is used where numbers or categories are connected to answers or groups of answers. Categories are the partitions of a data set of a given variable. This approach is used and described for each of the background factors.

##### **Background variables**

- Prior knowledge
- Personality traits
- Social networks

#### **Prior knowledge**

*Prior knowledge type 1, 'fascination and fun'* is collected by interviewing the novice entrepreneurs supplemented with information from their Curriculum Vitae where this domain of special interest sometimes is elaborated. During the interview the novice entrepreneurs are asked what their special interests are and what drive them within this domain. The subjects who appear during the interview are coded into well-defined topics, which cannot be pre-formulated because they can diverge extremely. This could be e.g. sailing on the ocean or play video games. By defining these topics it is possible to search for relations with the entrepreneurial opportunities within the process of recognition and development or other dimension within the process.

Data about *prior knowledge type 2, 'varied business and working experience'* is collected by the Curriculum Vitae of the novice entrepreneur. This data is divided into ten different functional areas (BTEC, 2010). The time spent on the function are connected to these functional areas where the time spent is measured in months. The functional areas and time spent on the job are also connected with the branch of industry this experience was executed in. 'Standaard bedrijfsindeling 2008' (CBS, 2008) identified twenty branches of industry and are

used to categorise this. From these functional areas and branches of industry analyses is made on what the relation is with the process of recognising and developing the entrepreneurial opportunity.

*'Educational activities'* is the third and last type of prior knowledge and is identified by analysing the Curriculum Vitae of the novice entrepreneur. The educational activities are divided into the already mentioned functional areas, possible the branches of industry and the level of education. Some educational activities are related to functional areas and some are more branch of industry specific. Depending on the educational activity it is connected to one or both of these two areas. These outcomes can be compared directly with the scope of the opportunities. Besides that the possible relation with other dimensions is analysed. The level of education is also taken into account where the possible education is divided into the five possible groups secondary school, Intermediate vocational education (MBO), bachelor, master or PHD.

### **Personal traits**

Personal traits are covered by the data from the participant profile survey. The novice entrepreneurs filled in this participant profile survey when they started at VLT. One part of the survey designed to construct the big five was constructed by the International English Mini-Markers, which consist of forty human traits (Thompson, 2008). Every Mini-Marker is filled in how accurately it is on likert scale from one to five. This generates the big-five personality characteristics model, which is used to analyse and compare the novice entrepreneurs on personal traits. The survey to construct the big five is shown in annex 3. For every characteristic of the big five model a score between 0 and 5 is determined which show the level of e.g. extraversion or neuroticism.

By using this five factor model and make a personal traits profile of every novice entrepreneur, the influence of personal traits on the process of recognition and development on the entrepreneurial opportunity is studied.

### **Social networks**

Data about social networks is collected via a questionnaire designed by VLT. Via a questionnaire the novice entrepreneurs construct their own network where the strong and weak ties are visible, the diversity within the network and possible structural holes. Granovetter (1973) describes the strength of a tie as a *'combination of the amount of time, the emotional intensity, the intimacy, and the reciprocal services which characterise the tie'* (pp. 1361). In his research Granovetter (1973) judges a given tie strong or weak based on intuition, supported by the mentioned factors amount of time, type of relation (emotional/intimacy) and the purpose of the relation. Based on this aspect together with the already elaborated description of De Koning (1999) of strong and weak ties in the theoretical framework the survey is constructed.

Within the survey the novice entrepreneurs are able to describe a maximum of five important contacts. Depending on their judgment of the importance of contacts they are able to fill in the survey from zero to five contacts. The contacts have to be described in detail, the type of the relation they have, the amount of time they have had contact and if a referral was necessary to facilitate the contact. Finally the relation between the contacts is asked to show the diversity within the network. The complete survey is presented in annex 4. From this survey a profile is made of the network whether they have weak or strong ties and the relation between the contacts within the network. With this profile conclusions can be drawn about the importance of the strong and weak ties (balance whether trustworthy is important) and the diversity (structural holes).

A summary of how to collect the background data of every background variable and how to make this data useful is given in Table 20 in annex 2.

### **3.2.3. The interview**

After elaborating what to measure the interview script is defined to make sure everything is identified during the interview (Myers, 2009). The script is categorised into six different sections. The interview starts with an introduction where the purpose of the interview and the research objective is elaborated. Besides that clear definitions are given about the entrepreneurial opportunity and the entrepreneurial process as elaborated in chapter 1. From this point the interview starts where the novice entrepreneur first of all is asked to describe

and draw his or her own process of recognition and development. A picture gives a clear view on how a novice entrepreneur experiences this process. From there the interviewer asks into detail the different variables as described above and in Table 19. The questions necessary to collect all the data are described in the script as additional questions. Next step in the interview is that the novice entrepreneur is asked to give his or her opinion about what influenced the process, to take into account when analysing the data and draw conclusions. From there the missing data of the background is collected where prior knowledge type 1 is collected by the interview. Finally the interview is closed with a summary. In Table 21 in the annex the script is described in detail. The script is described in past sentence, but when the novice entrepreneur not found his or her opportunity yet and still is in the process of recognising and developing the entrepreneurial opportunity, this is changed to present time. As one case study is the researcher himself it is difficult to execute an interview. The researcher follows the same steps as described in the interview to collect the same data supplemented with diaries and other documentation. If the novice entrepreneurs have relevant additional information for the case studies this is taken into account as well.

#### **3.2.4. Process data to draw conclusions**

After collecting the data it is coded for every case study where a pattern-matching logic (Yin, 1994) is used to analyse the cases. The three background variables derived from the theoretical framework are analysed on how it influences the six dimensions. Every case study is described separately in detail (Chapter 4) where the dimensions of the process and the background variables are described. Arising from this detailed description patterns are examined where the processes are compared including the influence of the background variables (Chapter 5). Because of the different case studies with different characteristics for some patterns theoretical replication is identified and conclusions are drawn (Chapter 6).

## 4. Case study analyses

To report and analyse the case studies a comparative structure is used within this chapter. Every case study is described according to the theoretical model with the process with their dimensions supported by pictures of the process and the background variables. This chapter describes the cases, where in the next chapter the cross-case analysis and findings are described.

### 4.1. Mark

Mark is a 27 year old novice entrepreneur who graduated recently (June 2009) and started his entrepreneurial journey in July 2009. His father was an entrepreneur as well in the retail industry, which inspired him to become an entrepreneur as well. He started after his graduation with his process of recognition and development of his entrepreneurial opportunity. After a trip to china he elaborated his first opportunity in august where he finally founded his company Both Solutions in March 2010. In figure 4 a visual representation is given of his process where besides important activities in grey. In bold the entrepreneurial opportunities are mentioned. The process of Mark with its dimensions is described in section 4.1.1. followed by the background variables in section 4.1.2. and a short summary in 4.1.3.



Figure 2: visual representation process Mark

#### 4.1.1. Dimensions within the process of Mark

In Mark's process of recognition and development six entrepreneurial opportunities appeared. His search towards the entrepreneurial opportunity started after his graduation in July 2009. He joined his parents on a holiday to china and decided to start his entrepreneurial journey. In China he pondered his possibilities thoroughly and tried to recognise opportunities overseas without results. Back in the Netherlands Mark decided to start working on an entrepreneurial opportunity he already considered for a year where he wanted to integrate Linux systems in SMEs. In this period he decided to become participant of VLT to get maximum support in his search for his entrepreneurial opportunity. After starting VLT he found out that his Linux opportunity was not as feasible as he expected to be and he cancelled this opportunity. He states *'subsequently this opportunity was worthless but I never took time to investigate it in more detail'*.

When Mark was searching for his entrepreneurial opportunity he guided himself by starting at *'who am I, what do I want, what is my knowledge and whom do I know'*. Taken this into account Mark came up with three new opportunities, which started quite vague. He stated: *'I wanted to implement open source applications in SMEs, doing something with building websites and doing something with social media. After a VLT training on social media I saw the ignorance of other participants where it seemed logical for me'*. He spent some time (around 6

days) on every opportunity but could not make real progress. He states *'I recognise opportunities by talking with people and collecting feedback'*.

Not completely convinced about the feasibility of the three mentioned opportunities Mark started debating with his younger brother in December. They talked about cooperation where they wanted to continue within the leather trade business of their father. Their father quitted with his leather business a few months earlier and they could continue this where the difference would be that they wanted to do it with a web shop. This stayed a little bit vague and Mark continued working on his other opportunities. The first week of March Mark went to a network meeting where he was confronted with the problem he was facing at that moment. Mark missed focus in what he wanted to do and could not explain what his business concepts were about.

He started debating with his younger brother and his Father again about the online leather ware shop. During this brainstorms they came towards an integration of online web shops with social media and developing websites. Because this has not something to do with the leather business their father became superfluous and his younger brother and Mark decided to continue together. They decided to focus on developing e-business strategies where they can build the online environment and guide the customer with a traditional strategy or a social media strategy with Mark Solutions as name of the new venture. About this final opportunity he stated: *'this idea fits me because it gives me a lot of energy and combines my strengths retail, communication and IT'*.

Mark identified six different entrepreneurial opportunities, which are shown in Figure 1 and listed in Table 2. As shown in Table 2 the opportunities are divided into two different branches of industry where the information & communication industry is predominant. This identifies the **scope of the process** of Mark as quit narrow. In figure 3 this is made visible as well where the EOs are close to the time line. The **intensity of the potential opportunities** within the process is six.

Entrepreneurial opportunity	Branch of industry	Time spent
1. Integrate Linux in MKB	Information & communication	5 days
2. Open source implementation MKB	Information & communication	6 days
3. Social media advice	Information & communication	6 days
4. Develop websites	Information & communication	6 days
5. Webshop leatherware	Information & communication; Wholesale and retail trade, repair of motor vehicles	5 days
6. E-business development & Strategy support	Information & communication	20 days

**Table 2: Mark's scope & time spent on entrepreneurial opportunities**

The process of Mark started in July 2009 where he started spending time on recognising and developing his entrepreneurial opportunity and ended in March 2010 where he came to his entrepreneurial opportunity. The year before July 2009, where he thought about the implementation of Linux in SMEs, he did not spent time on the opportunity and therefore this is not taken into account. The **total time to come to the final opportunity** was 36 weeks where **the time spent on one opportunity** was 5 or 6 days on the first to fifth opportunity and 20 days spent on the final opportunity as shown in Table 2.

The most important attributes on the **nature of the potential opportunity** for Mark are solving a customer's problem and the ability to generate positive cash flow where he both gives a score of 4. The least important attributes are the superiority of product/service and the potential to change the industry where he both gives

these attributes a score of 2. The attribute manageable risk (3) scores in between. When **judging the potential opportunity** the most important attributes are the existence of a large untapped market and his intuition or gut feeling where these both score 4. The least important attributes are a positive assessment or advice from others and the novelty of the opportunity which both score 2. The attribute favourable financial model (3) scores in between.

#### 4.1.2. Background variables Mark

##### Prior knowledge

As already described Mark is a young entrepreneur with not so much experience yet. From the interview Mark described his *fascination & fun* is focussed on the online environment and Basketball. From his younger days he already likes to order free stuff online and likes to build simple websites. Besides this special interest of the online environment he also likes to play Basketball where he likes to coach as well. Besides the interview his CV supports this.

Derived from his CV his *varied business & working experience* limits to several part time jobs or internships in the branches information & communications and culture, sports & recreation. All the jobs are for a period for less than a year, except being a system administrator at Givaudan Netherlands, which is for a period of three years. Striking between all these information & communication jobs is that Mark is a reporter for the Dutch soccer competition for an Italian soccer magazine. The functional areas are ICT, administration and customer service.

Work experience	Branch of industry	Functional area	Years of experience
Several part time jobs	Information & Communications	ICT, Administration	0-3
Part time reporter	Culture, sports & recreation	Customer service	1

Table 3: Varied business and working experience Mark

The *educational activities* are all within the branch information & communication with the functional areas ICT and marketing. He started in 1999 with a intermediate vocational education and finally graduated for his master communication in June 2009.

##### Personal traits

The big five characteristics of Mark are shown in Figure 3. Mark shows he is an extravert person where he scores highest on extraversion (3.8). Agreeableness (3.6) and openness (3.4) are a little bit lower. Conscientiousness (2.8) is lower and neuroticism (2.2) has the lowest score.

##### Social networks

Mark described three important contacts. His most important contact is Paul, his father. His father is a retired entrepreneur and traded leather products. He is important for Mark because of his network, experience and feedback he wants to give. They are in contact every two weeks. This is a strong tie in the network of Mark. Mark his second important contact is his VLT coach Gilles. He is a business developer and via VLT Mark is connected with Gilles. He gives Mark advice on how he can develop his business. When Mark started VLT they met each other. Every month they are in contact. This is a weak tie in the network of Mark. The third important contact of Mark is Hans, an uncle of Mark. He is entrepreneur as well and founded a company for battery chargers based on solar energy. Mark contacted him to ask advice on his business development where he gave useful input in a discussion with his experience as entrepreneur and investor. Once a month they are in contact with each other. This is a strong tie in the network of Mark. In Figure 3 the social network of Mark is presented.



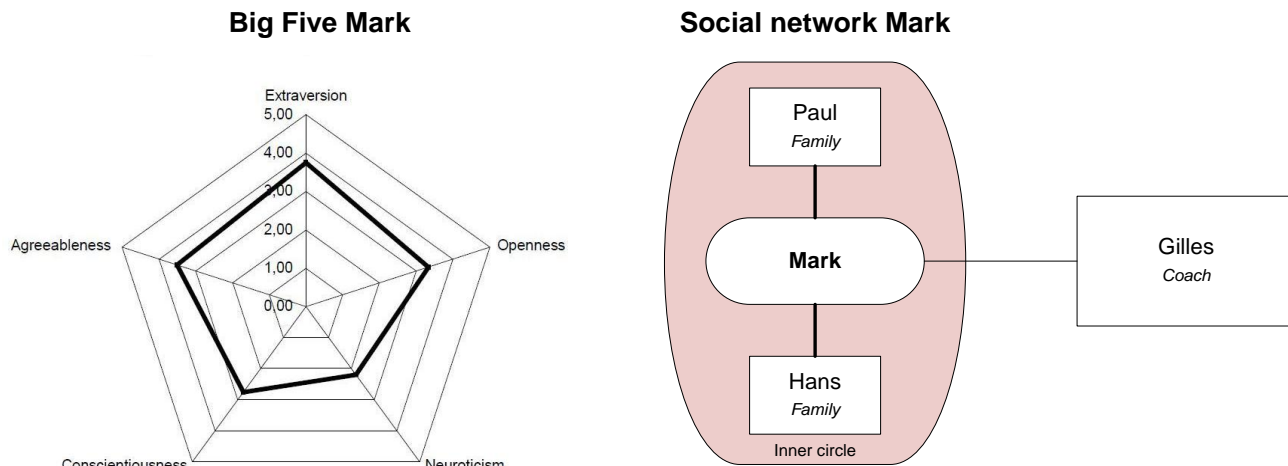


Figure 3: Big five (left) & Social Network Mark (right)

#### 4.1.3. Summary Mark

Mark is a young entrepreneur who recognized and developed his entrepreneurial opportunity and started exploiting B-Solutions. The scope of his process was with two branches of industry quite narrow with a high intensity of opportunities. The total time of the process to come to the final opportunity was 36 weeks where he spent between 5 and 20 days on each opportunity. The attributes Mark focuses on are solving a customer's problem and the ability to generate positive cash flow (nature), and the existence of a large untapped market and his intuition or gut feeling (judging).

The online environment fascinates Mark where he also collected little working experience. Most of his varied business and working experience contains the information & communications industry. Mark is highly educated with his master communication. Mark is an extravert, agreeable and open person. Mark considers strong ties in his network as important, where his network is not so extensive.

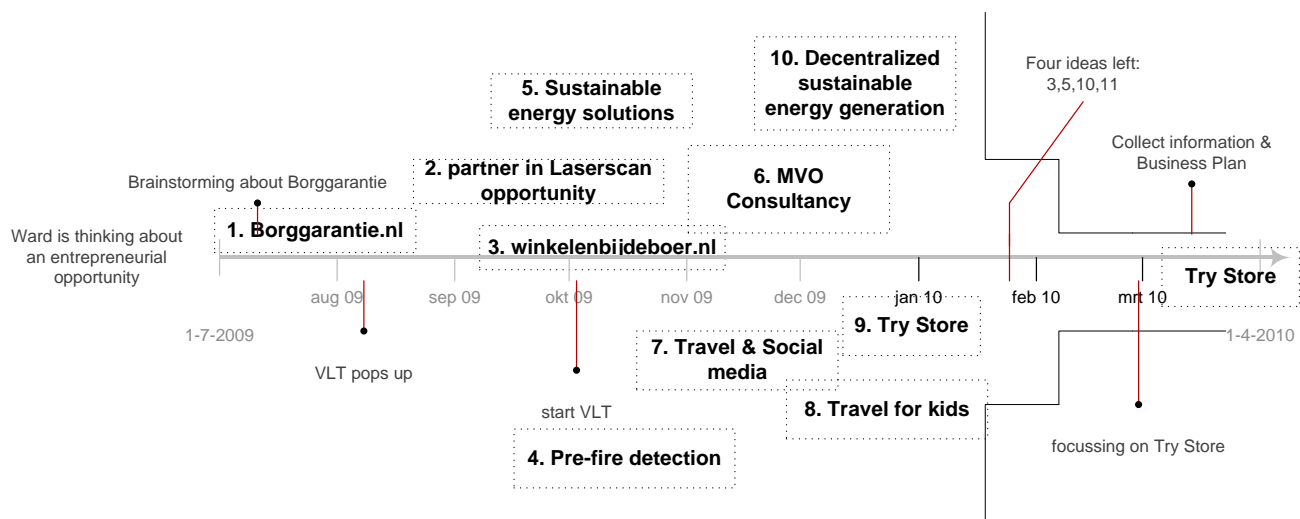
## 4.2. Ward

Ward is a 26 year old novice entrepreneur who started his entrepreneurial process in February 2009 when he came back from his internship in Malaysia with an entrepreneurial opportunity. In the same period he started his master Business Administration. The entrepreneurial opportunity he had could not convince him but entrepreneurship kept his interest. In August he became interested in VLT and decided to take the chance and became participant of VLT. In October he started with VLT to find support in the process of recognition and development of his entrepreneurial opportunity. Parallel on this process he started writing his graduation thesis. In Figure 4 the visual representation of his process is shown. In section 4.2.1. the process of Ward is described with his dimensions followed by the background variables in section 4.2.2. and a short summary in 4.2.3.

#### 4.2.1. Dimensions within the process of Ward

Ward went through the process of opportunity recognition where he finally found his entrepreneurial opportunity. His process started in July 2009, although he already started thinking about the first opportunity in February. During a holiday in Thailand during his internship in Malaysia he met a Swiss traveller with an opportunity for the Dutch market, which is called *borggarantie.nl* (EO 1). Back in the Netherlands Ward started with his master business administration and kept *borggarantie.nl* in mind. Not completely convinced about the opportunity but with an entrepreneurial drive in August Ward becomes interested in VLT. He decided to start as participant of VLT and combine this with executing his graduation thesis. At that moment, Ward was already partner at PIP Advice – a student consulting company - where he wanted to move from consulting for many different companies towards an own product.





**Figure 4: visual representation process Ward**

At one of the first information meetings of VLT in August Ward meets Lars who explores an entrepreneurial opportunity to treat surfaces of different materials with a laser scan technology (EO 2). After some meetings and orientation within this branch of industry Ward decided not to cooperate with him. Ward continued his search very open where he looked at who he is and what his knowledge is about. He also tried to connect via VLT and the University with people with technological knowledge and ideas. From his background as a farmer's son he developed a concept where he could bring consumers and farmers directly in contact with each other to offer good quality products for a reasonable price (EO 3). This concept lies very close to Ward as person. In the meanwhile he connected with other people who were more technology oriented where Ward is more commercial oriented which can lead to a match. A pre-fire detection system (EO 4) and some sustainable energy solutions (EO 5) were serious EOs for Ward but finally he could not find a click with potential partners or feeling with the technologies.

Within his process of recognition and development Ward monitored trends and followed entrepreneurial opportunities via websites like springwise.com and trendwatching.com and tried to combine this with his personal interest. One of the fields of interest was sustainable business development where he recognised opportunities by combining this with his consultancy experience (EO 6). The large amount of comparable concepts within the Netherlands could not convince him to be able to add value. Social Media was another area where Ward had a lot of interest and he tried to combine this with travelling (EO 7) which is one of his passions. In this line another concept that could be very suitable for the Dutch market is a subscription on 2 characters whom travelling around the world and mailing kids about their adventures (EO 8). Ward is still convinced about this concept but does not see this as a full time entrepreneurial opportunity. The interest for the try store started in December when a successful concept in Barcelona was discussed on springwise.com. A few weeks later he started exploring the opportunity and became very enthusiastic about the concept (EO 9). In the meanwhile Ward is also explored possibilities to set up a concept with a friend who did a project in setting up decentralised sustainable energy generation in small districts (EO 10).

As described Ward recognised a lot of different opportunities within different branches where finally the Try Store and winkelenbijdeboer.nl were concepts he worked out in detail. After talking to potential customers for both opportunities he did not see enough potential for winkelenbijdeboer.nl where the potential for the Try Store was strengthened by positive feedback. In his diary of the last week of February he wrote: *'this week I collected feedback from friends about the Sample store and I was already, but now completely convinced that I want to elaborate this concept to a business plan'*. From March he started focus completely on the Try Store. All the entrepreneurial opportunities are listed in Table 4.

As shown in Table 4 Ward identified a lot of opportunities within seven different branches of industry. This points out a very broad **scope of the process**. Besides a broad scope the **intensity of the potential opportunities** within his process is high with ten opportunities.

Ward started his entrepreneurial process of opportunity recognition and development actively in July 2009 and ended in March 2010, which defines the **total time to come to the final opportunity** as 36 weeks. The **time spent on every opportunity** varies and is shown in Table 4. A distinction can be made between the three concepts EO 3, EO 5 and EO 9 where 10 till 30 days are spent to develop the opportunity compared with 2 to 6 six days on the other opportunities.

Entrepreneurial opportunity	Branch of industry	Time spent
1. Borggarantie.nl	Real estate rental & trade	6 days
2. Partner laserscan opportunity	Construction	3 days
3. Winkelenbijdeboer.nl	Agriculture, forestry and fishing industry	15 days
4. Pre-fire detection	Industry	3 days
5. Sustainable energy solutions	Production, distribution and trade in electricity, gas, steam and air	10 days
6. MVO Consultancy	Consultancy, research and other specialised business services	3 days
7. Travel & Social media	Culture, sport and recreation	4 days
8. Travel for kids	Culture, sport and recreation	2 days
9. Try Store	Wholesale and retail trade, repair of motor vehicles; Consultancy, research and other specialised business services	30 days
10. Decentralised sustainable energy generation	Consultancy, research and other specialised business services	3 days

**Table 4: Ward's scope & time spent on entrepreneurial opportunities**

The most important attributes on the **nature of the potential opportunity** for Ward are solving a customer's problem and the ability to generate positive cash flow where he both gives a score of 5. The least important attribute is the potential to change the industry, which he gives a score of 1. The attributes manageable risk (3) and superiority of the product/service (2) score in between. When **judging the potential opportunity** the most important attributes are a positive assessment from others and existence of a large untapped market. The least important attribute is the novelty of the opportunity. The attributes favourable financial model (4) and intuition or gut feeling (4) score in between.

#### **4.2.2. Background variables Ward**

##### **Prior knowledge**

Ward is a young novice entrepreneur as introduced in the previous section. Based on his CV his *fascination & fun* contains the areas of soccer, fitness, squash, skiing, diving, cooking and travelling. Especially meeting other cultures by travelling around the world fascinates him. Another aspect where he is fascinated about and not mentioned on his CV is the agricultural sector because he grew up at a farm. *'It is an old-fashion branch of*

industry with a lot of new developments and some progressive farmers but most of the farmers are old fashioned and need new insights and guidance to prepare the industry for the future’.

Although it is limited, Ward has some relevant *varied business & working experience*, which is derived from his CV. He joined a student consultancy company called PIP Advice as partner within the branch of *industry consultancy, research and other specialised business services* where he worked within several functional areas. For three years he was responsible for the acquisition, contact person for clients, chairman of the team and working on assignments in several industries. Before joining PIP Advice Ward worked as a tour guide for the Royal Grolsch NV. for three years within the branch of industry ‘*industry*’ and as functional area *customer service*. Besides these working activities he was very active during his student time within his student association where he took place in the board as treasurer and executed several other activities. The varied business and working experience of Ward is presented in Table 5.

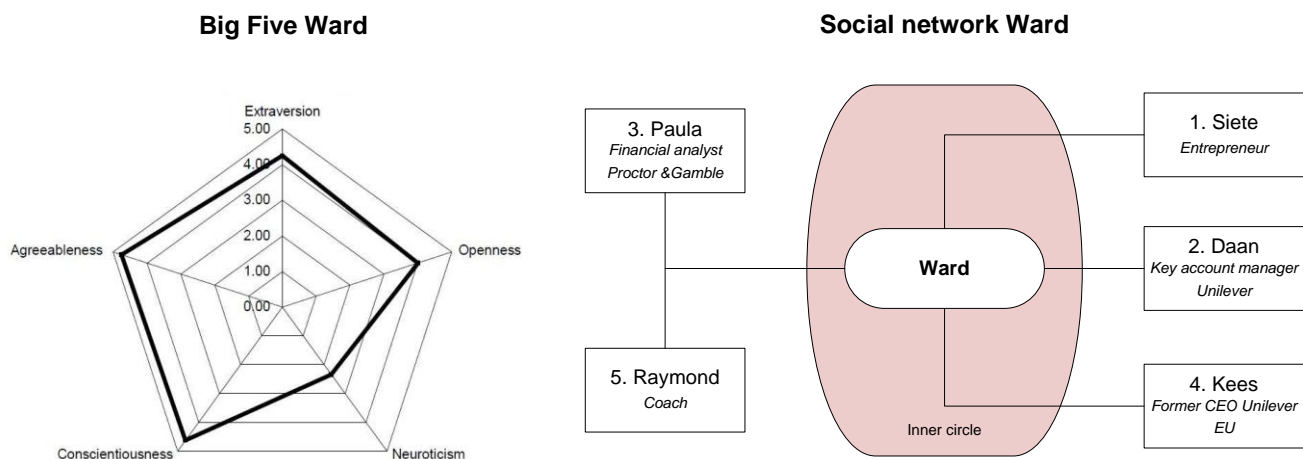
Work experience	Branch of industry	Functional area	Years of experience
Partner PIP Advice	Consultancy, research and other specialised business services	Several areas	3
Royal Grolsch N.V.	Industry	Customer service	3
Several other activities	Several branches of industry	Several areas	4

**Table 5: Varied business and working experience Ward**

The *educational activities* cannot be categorised into a branch of industry or functional area because these are too broad. After his secondary school Ward went to the University of Twente and executed a *Bachelor Industrial engineering & management* including a minor international exploration and finished it in 2009. After this Bachelor he currently finishes his *Master Business Administration* with a focus on Innovation & Entrepreneurship.

### Personal traits

The big five characteristics of Ward are presented in Figure 5. Ward scores very high at the characteristics agreeableness (4.8), conscientiousness (4.6) and Extraversion (4.3). On openness (4.0) he scores lower, but still high. Neuroticism (2.4) scores much lower specially compared with the other scores.



**Figure 5: Big five (left) & Social network Ward (right)**

### **Social networks**

Ward described five important contacts. The most important contact is Siete who is an entrepreneur. Ward took the initiative to contact him because he started his company after his graduation as well and wanted feedback on his business opportunity and the process he is going through. Ward knows Siete via their student house Patatras they both lived (not together). Ward knows Siete already for eight years but on an average they had contact once a year. This is a weak tie in the network of Ward. The second important contact of Ward is Daan. Daan is key account manager at Unilever. Ward asked him to evaluate his value proposition. He gave interesting information from a potential customers perspective. Ward knows Daan via their student house Patatras they both lived (not together). Ward knows Daan already for eight years but on an average they had contact once every two years. This is a weak tie in the network of Ward. The third important contact is Paula who is financial analyst at Proctor & Gamble. Ward took the initiative to contact her via a referral. This referral is Thomas and is a friend of Ward who graduated at Proctor & Gamble. Ward contacted her to evaluate his business opportunity where she confirmed his thoughts. This is a weak tie in the network of Ward. The fourth important contact for Ward is Kees who is former CEO Unilever Europe. In an early stage Ward asked Kees to give feedback on his entrepreneurial opportunity. He offered to help Ward with his network as well. Ward knows Kees via their student house Patatras they both lived (not together). Ward met Kees once before five years ago. This is a weak tie in the network of Ward. The last important contact for Ward was Raymond who is his VLT coach and is researcher at the University of Twente. Via VLT Ward was connected with Raymond where he gave Ward advice on how he develops his business and helped to make choices. When Ward started VLT they met each other. Every month they have contact. This is a weak tie in the network of Ward. In Figure 5 the network of Ward is presented.

#### **4.2.3. Summary Ward**

Ward is the youngest novice entrepreneur who recognized his entrepreneurial opportunity and can start exploiting the Try Store. Ward's scope was very broad with seven different branches of industry. Logically the intensity was very high as well with ten different opportunities. The total time to come to the final opportunity was 36 weeks where he spent two to thirty days on an opportunity. The different attributes Ward focuses on are solving a customer's problem and the ability to generate positive cash flow (nature), and a positive assessment from others and existence of a large untapped market (judging).

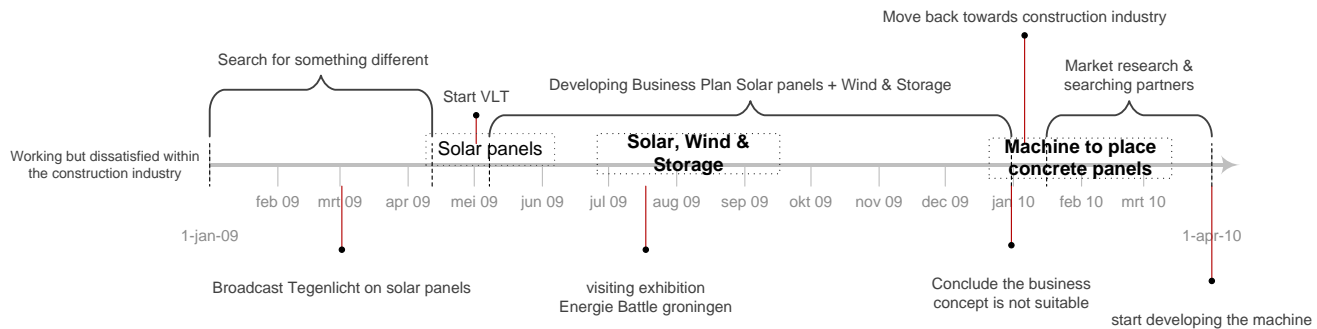
Many things but especially the agricultural sector and traveling fascinate Ward. His most relevant varied business and working experience is as partner of PIP Advice within the branch consultancy, research and other specialised business services. Ward is highly educated and is finishing his master business administration. He is an agreeable, conscience and extravert person and he has a large, diverse network focused on weak ties.

### **4.3. Douwe**

Douwe is a 32 year old novice entrepreneur with extensive experience in the construction industry. Dissatisfied by decreasing demand within his construction company because of the economic crisis and therefore a necessity Douwe decided to start an entrepreneurial search for something else. In May 2009 Douwe decided to start with VLT. A visual representation of the process of Douwe is shown in Figure 6. In section 4.3.1. the process of Douwe is described with its dimensions followed by the background variables in section 4.3.2. and a short summary in 4.3.3.

#### **4.3.1. Dimensions within the process of Douwe**

Douwe has extensive experience in the construction industry and via his father he joined a construction company where his father was shareholder. For this company he set up an Ytong division where they were able to build walls with lightweight Ytong blocks. The economic crisis started and the construction industry experienced difficult times. After firing many employees and eliminating the Ytong division Douwe was disappointed and frustrated about the low margins within the construction industry and decided to search for something else.



**Figure 6: visual representation process Douwe**

Within his search he encountered VLT and decided to participate within their program starting in May 2009. He wanted to improve himself in different types of skills because he was a little bit insecure about things like networking and presenting. In this same period he watched a broadcast of *tegenlicht* about solar panels and became very interested in this new technology and its products. He saw the solar panels as an entrepreneurial opportunity and decided to start developing this opportunity. During this period from starting in May 2009 and ending in January 2010 he recognised only solar panels were not sufficient because of the dependency of subsidies and for the same reason as he moved away from the construction industry; low margins.

After visiting the exhibition Energy Battle in Groningen Douwe concluded he had to expand the solar panels with storage to cover peaks in the energy system. Not only solar panels could generate sustainable energy for the storage but wind turbines as well. He investigated the technical possibilities and found out it was very difficult to develop, especially because he was not familiar with the technology and had no network in the branch of industry. In the meanwhile the conditions within the construction industry improved from where Douwe states *'the development of the solar, wind and storage concept was too difficult and would take too much time and money because of the lack of knowledge and network. I felt I needed to search for an opportunity which was closer to my own knowledge'*. Within the Ytong division Douwe recognised the problem of making a lot of mistakes by placing the Ytong blocks. Besides the labour-intensive process it would decrease repair costs when they would be able to place it correctly at once. It would increase the quality of the walls and improve the circumstances for the construction worker. In January 2010 he decided to stop with the development of the solar, wind and storage concept and started developing a machine to place concrete panels. After a period where he searched for market information and potential partners, in April 2010 he decided to start developing the machine.

Douwe identified two entrepreneurial opportunities where the first opportunity evolved from solar panels towards Solar, Wind and Storage within the branch of industry *production, distribution and trade in electricity, gas, steam and air*. The second entrepreneurial opportunity recognised and developed by Douwe was the machine to place concrete panels within the branch of industry *construction*. Following on these findings, **the scope of the process** of Douwe is very narrow with two different branches of industry. With only two entrepreneurial opportunities **the intensity of the potential opportunities** is two.

Entrepreneurial opportunity	Branch of industry	Time spent
Solar, Wind & Storage	Production, distribution and trade in electricity, gas, steam and air.	45 days
Machine to place concrete panels	Construction	20 days

**Table 6: Douwe's scope & time spent on entrepreneurial opportunities**

The **total time to come to his final entrepreneurial opportunity** is based on his process started January 2009 and finished April 2010, which is total of 68 weeks. During the complete process Douwe spent around 2.5 day a week on the recognition and development of the entrepreneurial opportunities including the trainings of VLT. Excluding these trainings, he **spent 45 days on the solar, wind and storage opportunity and 20 days on the machine to place concrete panels** as shown in table 6.

The most important attributes on the **nature of the potential opportunity** for Douwe are solving a customer's problem and the ability to generate positive cash flow where he both gave a score of 5. The least important attributes are the superiority of product/service and the potential to change the industry where he both gave these attributes a score of 2. The attribute manageable risk (3) scored in between. When **judging the potential opportunity** the most important attributes are how novel the opportunity is and his intuition or gut feeling where these attributes both scored 5. The least important attribute is a positive assessment or advice from others. The attributes favourable financial model (3) and the existence of a large untapped market (3) scores in between.

#### 4.3.2. Background variables Douwe

##### Prior knowledge

During the interview his *fascination & fun* Douwe mentioned is based on his experience in the construction industry. *'At school I was already very interested in the construction industry. After my educations I started in this branch and after moving away a little bit for a short period, I still think this fascinates me'*. Douwe mentioned skiing, fitness, documentaries and going out with friends as hobbies on his CV.

Derived from his CV, his *varied business & working experience* is divided into three different jobs. The varied business and working experience of Douwe is presented in Table 7. His business and working experience is executed and collected within the branch of industry construction. He executed jobs as executor (production), sales and within the Metselcombinatie as manager where he covered several functional areas. His total experience is 10 years.

Work experience	Branch of industry	Functional area	Years of experience
Metselcombinatie	Construction	Several	3
Metselnet Nederland	Construction	Production, Sales	3
Simon Benus	Construction	Production	4

Table 7: Varied business and working experience Douwe

The *educational activities* of Douwe are categorised within the branch of industry construction. On his secondary school he followed an education *architecture* continued on the level of *intermediate vocational education (MBO)*. Furthermore he achieved several certificates within the same branch of industry.

##### Personal traits

The big five characteristics of Douwe are presented in Figure 7. Overall, Douwe scores low on every characteristic. His highest scores are on conscientiousness (2.6) and openness (2.6). Agreeableness (2.1) and extraversion (1.8) are even lower. Neuroticism (2.2) scores a little bit higher.

##### Social networks

Douwe described five important contacts, which are all weak ties. The most important contact for Douwe was Jurriens who is project leader within the construction industry. They already knew each other and he contacted Douwe for an assignment. They only have contact when there is a need from one side. This could be two times

a year and therefore Douwe knows him somehow. The second important contact for Douwe is Wijnand who is an entrepreneur in the field of sensor technology. Wijnand is a participant of VLT as well from where Douwe knows Wijnand. Douwe took the initiative to contact Wijnand because he is a possible partner for Douwe to develop sensors for his product. The third important contact for Douwe is Gerard who is his VLT coach. He was important for Douwe because he is a sounding board and helped Douwe to develop his product. They met each other when Douwe started with VLT and meet once a month. This is a weak tie in the network of Douwe. The fourth important contact for Douwe is Tini who is project leader at UWV. Douwe took the initiative to contact her because he was searching for personnel. On an average they have contact three times a year. She delivers the personnel who finally have to work with his product. The last contact of Douwe is Rob who is programme director of VLT. They know each other from the start of VLT and Rob took the initiative to contact Douwe. Rob helped Douwe to come in contact with companies to develop his product. In Figure 7 the network of Douwe is presented.

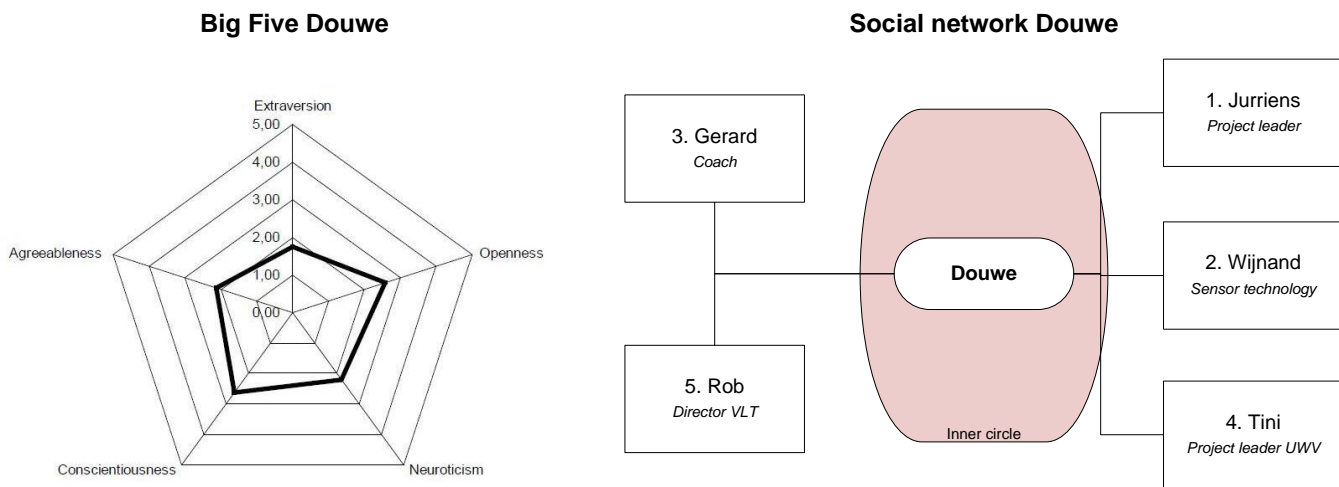


Figure 7: Big Five (left) & Social network Douwe (right)

#### 4.3.3. Summary Douwe

Douwe is an entrepreneur who recognised his entrepreneurial opportunity – a machine to place concrete panels - and developed it within the branch of industry construction. His scope is narrow with two different branches of industry. The intensity was low with two opportunities. The total time to come to the final opportunity was 68 weeks. Douwe spent much time on both entrepreneurial opportunities. He spent 45 days before deciding not to exploit the Solar, wind and storage and 20 days on the Machine to place concrete panels. The attributes important for Douwe are solving a customer's problem and the ability to generate positive cash flow (nature), and how novel the opportunity is and his intuition or gut feeling (judging).

The branch construction fascinated Douwe already for a long time. His 10 years varied business and working experience and educational activities on the level of intermediate vocational education are within this branch as well. Douwe scores low on his personal traits where openness and conscientiousness have the highest scores. Douwe described a diverse network within as well as outside the branch of industry construction with all weak ties.

#### 4.4. Fred

Fred is a 32 year old novice entrepreneur who is active in the automotive industry by purchasing and selling two types of Porches. After several other jobs Fred searched for a new challenge and decided to start with VLT in May 2009 to start his process of recognition and development for his entrepreneurial opportunity. In Figure 8 a visual representation of his process is shown. In section 4.4.1. the process of Fred is described with its dimensions followed by the background variables in section 4.4.2. and a short summary in 4.4.3.



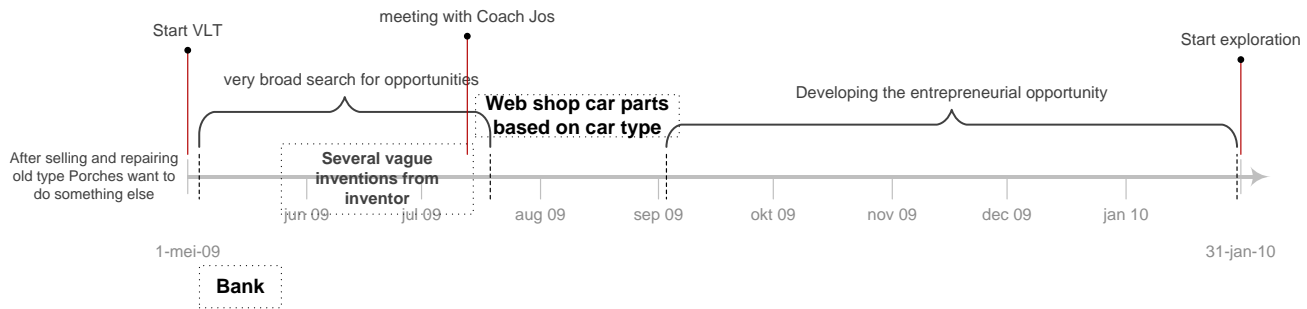


Figure 8: visual representation process Fred

#### 4.4.1. Dimensions within the process of Fred

Fred started his process of recognition and development for an entrepreneurial opportunity because he was seeking a new challenge. In May 2009 he started with VLT. He started his search with a very broad view where he tried to collect several entrepreneurial opportunities to select a few opportunities to continue with. In his search towards several opportunities he watched the patents of the University, met other participants of VLT and an inventor. The inventor suggested some opportunities, but Fred could not find a match with one of these opportunities because of the long development periods and the lack of knowledge on the technologies. For the same reasons patents from the university or cooperation with other participants not matched with Fred. He recognised an EO to set up a bank. Although he considers it as a real entrepreneurial opportunity, he did not spend time to develop this opportunity seriously.

After a few months Fred had a meeting with his coach Jos who showed him when try to recognise and develop an opportunity he had to focus on *who he is and where his knowledge is about*. Fred pointed out during the interview he is very impatient and can lose his focus very easily. Therefore he searched for an entrepreneurial opportunity, which could be set up within three years. With these aspects in mind he recognised the opportunity of starting a web shop in car parts for special car types. This by using this car types as starting point to search for the parts. Parts of different cars or often the same, but priced differently where Fred recognised huge margins. This fit with his expectations and in September 2009 he started with developing this entrepreneurial opportunity. At the end of January 2010 he decided to start exploiting it.

Fred had not found many different entrepreneurial opportunities. Besides the opportunity to start up a bank within the branch of industry *financial institutions* and the vague inventions of the inventor he recognised besides his final opportunity no more entrepreneurial opportunities. Based on the two entrepreneurial opportunities and associated branches of industry **the scope of the process** is quit narrow with two branches of industry while Fred describes his own scope as very broad. **The intensity of the entrepreneurial opportunities** is two. **The total time to come to the final opportunity** was from May 2009 till January 2010, which is 32 weeks.

Entrepreneurial opportunity	Branch of industry	Time spent
Bank	Financial institutions	2 days
Web shop car parts based on car type	Wholesale and retail trade, repair of motor vehicles	20 days

Table 8: Fred's scope & time spent on entrepreneurial opportunities

Fred **spent** during the whole period one day a week **on recognise and develop his entrepreneurial opportunity**. To recognise and develop the EO of the bank it took him two days and for the web shop car parts based on car types he used 20 days.



The most important attribute about the **nature of the potential opportunity** for Fred is the ability to generate positive cash flow where he gives a score of 5. The least important attribute is the potential to change the industry where he gave this attribute a score of 1. The other attributes manageable risk (4), solving a customer's problem (2) and superiority of the products/service (2) scored in between. When **judging the potential opportunity** the most important attribute is the favourable financial model, which he gave a score of 5. The least important attribute is novelty of the opportunity with a score of 2. The other attributes existence of a large untapped market (4), intuition or gut feeling (4) and the positive assessment from other (3) scored in between.

#### 4.4.2. Background variables Fred

##### Prior knowledge

Fred's fascination & fun mentioned in the interview are trade and travelling. He states: *'my interest in cars started because of my passion for trade. I bought a car and after disassembled I sold all the parts separately. When you are able to disassemble all the parts, you are also able to assemble it'*. Travelling around the world is one of his hobbies. On his CV he mentions squash and boxing as hobbies as well.

The *varied business and working experience* of Fred is diverse and divided into two different branches of industry as shown in Table 9. He started in 1999 as callcenter agent at spaarselect Twente with a part time job besides his educational activities where he became supervisor after one year. After four years he became full time account manager at Spaarselect Rhenen. From the financial institution he moved towards the automotive branch, although it was in the same functional area (call centre manager) as within Spaarselect. The last four years Fred traded and repaired Porsche 944 and 928 within his one-man business.

Work experience	Branch of industry	Functional area	Years of experience
Frawi Porsche	Wholesale and retail trade, repair of motor vehicles	Several functional areas	4
Koskamp automaterialen	Wholesale and retail trade, repair of motor vehicles	Customer service	1
Spaarselect Rhenen	Financial Institutions	Sales	1
Spaarselect Twente	Financial Institutions	customer service	4

Table 9: Varied business and working experience Fred

The *educational activity* of Fred is categorised in the branch wholesale and retail trade, repair of motor vehicles. After his secondary school he executed Small Business and Retail Management on a bachelor level at the Saxion Hogeschool Enschede and finished this in 2003.

##### Personal traits

The scores on the big five characteristics of Fred are relative low and presented in Figure 9. The highest score Fred has is on openness (3.1). On extraversion (3.0), conscientiousness (2.6) and agreeableness (2.2) the scores are a little bit lower. Neuroticism (1.8) scores lowest, but scores low for every novice entrepreneur.

##### Social networks

Fred described two important contacts. The first important contact is Mark who is an IT-specialist. Mark is a friend of Fred and Fred contacted him to develop the IT environment of his entrepreneurial opportunity. He knows him already eleven years and they have contact once a week. This is a weak tie in the network of Fred. The second important contact for Fred was Jos who is his VLT coach. At the start of VLT they were broad

together where they had contact once a month and they know each other somehow. Jos helped Fred to find out what type of opportunity was suitable for him. This is a weak tie as well in the network of Fred. Fred's social network is presented in Figure 9 on the next page.

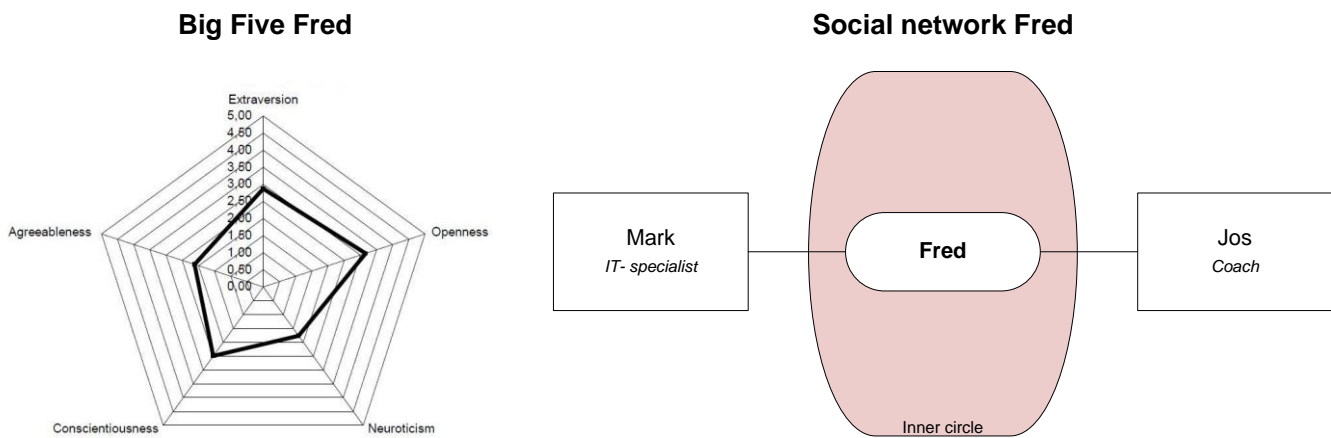


Figure 9: Big Five (left) & Social network Fred (right)

#### 4.4.3. Summary Fred

Fred recognised his entrepreneurial opportunity – a web shop car parts based on car type - within the branch of industry wholesale and retail trade, repair of motor vehicles. His scope was narrow with one additional branch of industry. The intensity was low with only two opportunities. The total time to come to the final opportunity was 32 weeks. Fred spent two days on set up a bank, and spent 20 days on his final entrepreneurial opportunity. The most important attributes for Fred are the ability to generate positive cash flow (nature), and the favourable financial model (judging).

Fred is fascinated by trade and likes to travel. His 10 years of varied business and working experience is divided into the two branches wholesale and retail trade, repair of motor vehicles and financial institutions. He followed the education small business and retail management on a bachelor level. Fred scores not very high on the big five personal traits where he is mostly extravert and open. Fred's network contains two important contacts, which are both weak ties.

#### 4.5. Henk

Henk is 49 years old and currently working as an independent executive manager in several areas. After management functions within ABN Amro and Siemens both for about 10 years and now being interim manager he decided to try to go back to his technological roots and find a match with a technology partner to start his own business. After a searching process of 10 months he continued with his interim and consultancy activities but in a different form, but continuous his search for an technological opportunity. He stated *'by coming back at my interim/consultancy work I realised this is the easiest point to start and fall back on, because you have experience and track record and people value me on this background'*. In Figure 10 a visual representation of the process is shown. In section 4.5.1. the process of Henk with its dimensions is described followed by the background variables in section 4.5.2. and a short summary in 4.5.3.

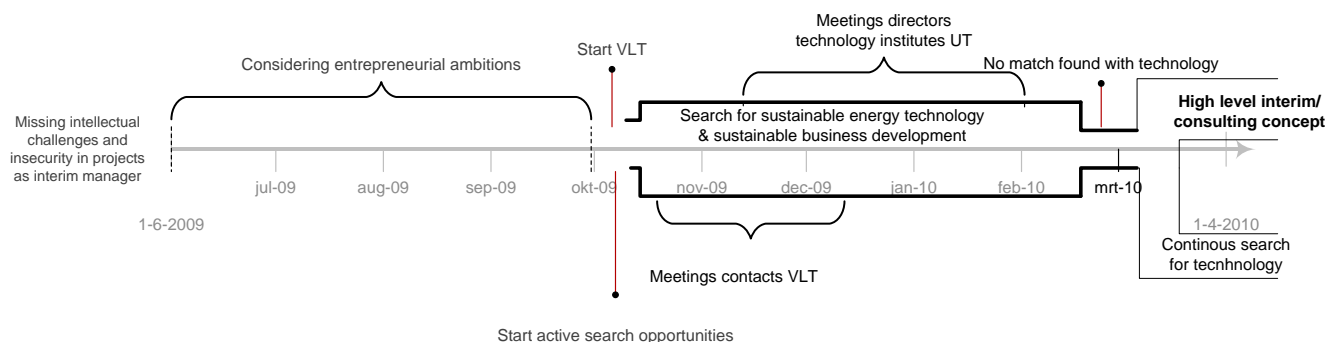


Figure 10: visual representation process Henk

#### 4.5.1. Dimensions within the process of Henk

Henk went through his process of recognition and development where finally one entrepreneurial opportunity appeared suitable for him. Henk started his process in June 2009 and was working as an independent executive manager where a lot of competition existed. Henk sometimes missed intellectual challenges because he was forced to execute assignments beyond his level because it was difficult to acquire assignments. After a period of orientation he decided to become participant of VLT in October 2009. He wanted to find or be connected with a technology or technology partner, from where an interesting technology could be commercialised.

Henk started his search by the network provided by VLT. He stated: *'with most of the people in the network I did not have affinity or could not find a click'*. In his search he was specifically interested in sustainable energy technology where he remarked that *'it had to be a really interesting technology to deviate from this limitation'*. Henk decided to make contact with the directors of the different technology institutions of the University of Twente. These institutions commercialise technology from the University, which could be interesting partners for him. Within these bureaucratic organizations he was not able to find a match within the available time. In the meanwhile Henk met another independent executive manager who shared the same vision within the field of interim management and consulting where they both operate. They developed a concept where they can distinguish themselves from the other executive managers. This is not the entrepreneurial opportunity Henk was and is looking for but he also needed to provide in his income. Besides executing the opportunity of high level interim/consulting activities Henk continued his search for sustainable energy technology opportunities but on a different way. He states *'In my search I am coming back at my interim/consulting activities where I try to execute this with a partner on a higher level. This does not mean I lost my interest in sustainable business technology, but I will change my focus towards already started small companies or spin offs from the University. To skip a long development period and because my added value is on letting the business accelerate and not developing the technology, my focus is changed'*.

Entrepreneurial opportunity	Branch of industry	Time spent
High level interim/consulting concept	Consultancy, research and other specialised business services	10 days

Table 10: Henk's scope & time spent on entrepreneurial opportunities

Henk searched on a structured way but only found one entrepreneurial opportunity, which lies close to its original work. With only one entrepreneurial opportunity the **scope of the process** is very narrow because this can only represent one branch of industry. Besides the branch *consultancy, research and other specialised business services* the remark has to be placed that Henk was searching in the branch *distribution and trade in electricity, gas, steam and air* as well. Following on this the **intensity of the potential opportunities** is low with one opportunity. The **total time Henk spent** to come towards its entrepreneurial opportunity was 40 weeks (10 months). Henk **spent around 10 days on the final entrepreneurial opportunity**.

The most important attributes on the **nature of the potential opportunity** for Henk are solving a customer's problem and the ability to generate positive cash flow where he both gave a score of 5. The least important attribute is manageable risk, which Henk gave a score of 2.5. The attributes superiority of product/service (3) and the potential to change the industry (3) scored in between. When **judging the potential opportunity** the most important attributes are how novel the opportunity is, the existence of a large untapped market and his intuition or gut feeling where these attributes all scored 5. The least important attribute is a positive assessment or advice from others with a score of 1.5. The attribute favourable financial model (4) scored in between.

#### 4.5.2. Background variables Henk

##### Prior knowledge

Henk has collected prior knowledge where he states *fascination & fun* as: *'in my opinion this is the most important driver of achieving something'*. During the interview Henk describes a few aspects of *fascination & fun* for him. The first aspect that intrigues him is thinking outside the existing pathways. *'When people are standing in the line to visit something, I will not go there but search for something comparable which is not discovered yet by the crowd'*. The second aspect Henk is fascinated about is breakthrough technology. Especially sustainable energy resources where in his opinion this generation must make changes to make the planet a sustainable environment. A third aspect he mentions is reducing complex questions into simple explanations. Leading from his CV hobbies are sailing, mountains, culture, politics, sports (judo black belt) and driving heavy trucks.

Derived from his CV, Henk's *varied business & working experience* is extensive and presented in Table 11 including the branches of industry, functional areas and years of experience. Henk started his Career at the Royal Netherlands Navy within the submarine service. After two years he started at Siemens as project and account manager. After a sales function he finished his ten-year period as business unit director 'special projects and defence'. In 1999 he switches to ABN Amro and executed several financial management functions. After eight years ABN Amro Henk became independent executive manager where he delivered several projects as crisis manager and concern controller.

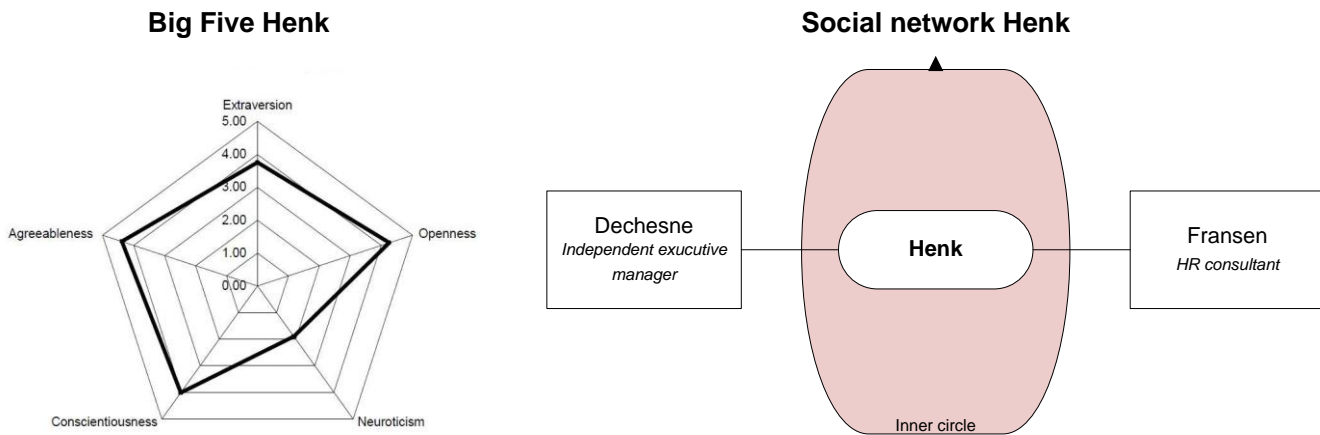
Work experience	Branch of industry	Functional area	Years of experience
Independent executive	Consultancy, research and other specialised business services	Several areas	3
ABN Amro	Financial institutions	Finance	8
Siemens	Information & communication	Sales, R&D	10
Royal Netherlands Navy	Government & compulsory insurance	R&D	2

Table 11: Varied business and working experience Henk

The most important *educational activity* is his Master degree Electrical engineering which is applicable on several different branches of industry and cannot be addressed towards a functional area. Throughout the years Henk participated within several executive programs divided over several branches of industry and functional areas.

##### Personal traits

The big five characteristics of Henk are presented in Figure 11. Henk scores highest on extraversion (3.8) and a little bit lower on agreeableness (3.6). Openness (3.4) is a little bit lower. Same as for most of the novice entrepreneurs, conscientiousness (2.8) and neuroticism (2.2) score lower.



**Figure 11: Big five (left) & Social network Henk (right)**

### Social networks

Henk described two important contacts, both weak ties. The first important contact is Dechesne who is an independent executive manager as well. Henk took the initiative to contact him and is able to use him as sparring partner to develop his entrepreneurial opportunity of high-level consultancy and interim management and become partner as well. Henk knows him for one year via an educational program for interim managers. They have contact once a week. Henk knows him somehow. The second important contact for Henk is Fransen who is a HR Consultant. They know each other for four years, have contact once a week and know each other very well. They contacted each other to explore opportunities for the financial sector within the same high-level consultancy and interim management concept Henk recognised. In Figure 11 the network of Henk is presented.

#### 4.5.3. Summary Henk

Henk is an interim and executive manager and is searching for sustainable energy opportunities within the branch distribution and trade in electricity, gas, steam and air. After his search he recognises his opportunity – a high level interim/consulting concept – within the branch consultancy, research and other specialised business services. The scope and intensity of Henk is narrow and low with only one entrepreneurial opportunity and branch of industry. The total time to come to the entrepreneurial opportunity was 40 weeks and spent around 10 days on this final opportunity. The attributes important for Henk are solving a customer's problem and the ability to generate positive cash flow (nature), and how novel the opportunity is, the existence of a large untapped market and his intuition or gut feeling (judging).

Henk is driven by fascination where his most important drivers are outside the existing pathways and breakthrough technology. He has an extensive varied business and working experience of 20 years within several managerial functions and different branches. Henk is educated as an engineer on a master level. Henk shows he is an extravert and agreeable person where he scores low on neuroticism. Henk described a small network with two weak ties as potential partners.

### 4.6. Summary case studies

Every novice entrepreneur is described according to the dimension and background variables as derived in the theoretical framework. The novice entrepreneurs show similarities and differences where comparisons and possible relations can be made and presented in the next chapter. Every novice entrepreneur recognised and developed an opportunity, which he starts to exploit or already is exploiting. The visual representations give an overview of the processes of the novice entrepreneurs. These representations show the length of the process, the entrepreneurial opportunities and other important activities during the process of recognition and development. The different tables show the entrepreneurial opportunities connected with the branches of industry and the time spent and other tables show the varied business and working experience.



## 5. Findings

In this chapter the findings of the case studies are analysed where the effect of the background variables on the dimension within the process of the novice entrepreneurs are presented. Comparisons are made between the novice entrepreneurs as well as interesting finding on an entrepreneurs level. By identifying these relations sub research question three is answered where this is formulated as:

*How do background variables of novice entrepreneurs affect the dimensions within the process of recognition and development of the entrepreneurial opportunity?*

The chapter is divided in different sections based on the different dimensions. The effects of the background variables are described for every dimension. The chapter is summarised with an overview of the relations between the background variables and the dimensions.

### 5.1. Influence on the scope of the potential opportunities

Prior knowledge, personal traits and social networks influenced the scope of the potential opportunities. Looking at the process of recognition and development of the entrepreneurial opportunity of the novice entrepreneurs they all tried to have a broad scope. This was more difficult they expect. The scope of every novice entrepreneur is presented in Table 12. Nevertheless, their final entrepreneurial opportunity was coming back within their field of expertise where they posses prior knowledge and social networks. Personal traits can broaden this scope.

	Mark	Ward	Douwe	Fred	Henk
<i>Scope of the potential opportunities (#)</i>	2	7	2	2	1

**Table 12: Scope of the potential opportunities of every novice entrepreneur**

#### Prior knowledge

The older and more experienced novice entrepreneurs Douwe, Fred and Henk show they tried to recognise and develop entrepreneurial opportunities outside their cognitive framework (Baron, 2006) – searching within completely different branches of industry they were familiar with or in at that moment - but this was more difficult than they expected. Therefore their scope kept narrow as presented in Table 12. A detailed comparison of the branches of industry is presented in Table 22 in Annex 6. They tried to have a broad scope but it was difficult for them to recognise entrepreneurial opportunities outside their cognitive framework. E.g. Douwe tried to move away from the branch of industry *construction*. Via the EO *solar, wind and storage* in the branch of industry *production, distribution and trade in electricity, gas, steam and air* he came back in branch of industry *construction*. For Fred and Henk similar movements are detected. They all have an extensive *varied business and working experience*, which limits the scope of the entrepreneurial opportunities and they finally come back within the branch of industry they have this experience. *Fascination and fun* influences the scope of the potential opportunities as well. Fascination, rather than fun, is related with the final entrepreneurial opportunities. Douwe described his fascination for the construction industry, Fred described his fascination for trade and Henk described his fascination to simplify complex problems into easy solutions. This is related to high-level management problems where his entrepreneurial opportunity is about. For Henk fascination was a driver to broaden his scope and try to find an opportunity within the area of sustainable energy solutions, but he was not able to recognise a suitable entrepreneurial opportunities. Because fascination influences the directions of search and is important as motivation for the final opportunity this influences the scope as well. When having extensive varied business and working experience, *educational activities* have less influence on the scope of the process. Although the final opportunities of Douwe and Fred are related with their educational

activities this more was a basis for their business and working experience than a direct influence on the scope. Henk showed no relation between his educational activities and his scope. When having extensive varied business and working experience, educational activities could have a positive influence on the scope. This because of the basic knowledge and the field of interest the person has. Nevertheless it cannot be concluded based on these case studies.

The two younger novice entrepreneurs Mark and Ward have less varied business and working experience where the *educational activities* play a more important role as starting point for them and contribute to their cognitive framework. Mark's scope of potential opportunities is limited within the branch of industry *information and communication* where his educational activities are within this branch of industry as well. The several part time jobs and internships were in the same branch as well. Ward's scope is very broad with seven different branches of industry where his educational activities are very broad as well and not really specifiable in one branch of industry. His entrepreneurial opportunities are related with his educational activities as well as the subjects he described as fascination and fun like travelling and the agricultural sector. Ward's varied business and working experience as consultant is very broad as well which supports the broad scope. No relation is identified based on the functional areas.

### Personal traits

Ardichvili (2003) mentioned optimism and creativity as important traits to recognise opportunities. According to Judge & Cable (1997) these traits can be connected with agreeableness and openness. In Table 13 the scores of the big five characteristics are presented. Ward scores very high on both agreeableness and openness, compared to the other novice entrepreneurs. When comparing this with the scope of the potential opportunities as presented in Table 12 Ward has with seven by far the broadest scope. This supports the findings of Ardichvili (2003) on optimism and creativity. Besides agreeableness and openness Ward scores high on extraversion and conscientiousness as well. These personal traits could broaden the scope as well. No other relations are identified between the personal traits and the scope of the potential opportunities.

Big five characteristics	Mark	Ward	Douwe	Fred	Henk
Extraversion	3.8	4.3	1.8	3.0	3.8
Neuroticism	2.2	2.4	2.2	1.8	2.2
Agreeableness	3.6	4.8	2.1	2.2	3.6
Conscientiousness	2.8	4.6	2.6	2.6	2.8
Openness	3.4	4.0	2.6	3.1	3.4

Table 13: Scores of big five characteristics of every novice entrepreneur

### Social networks

A relation is identified between the social networks of the novice entrepreneurs and the scope of the research. The diversity of Ward's network can influence the scope of the process. There are not many structured holes identified within the networks of Mark, Fred and Henk. Mark described only one weak tie, which cannot generate a structured hole. Fred and Hans' network exists of two weak ties with both one structured hole. Douwe and Ward both mentioned five different contacts with many structured holes between these contacts. Despite this diverse network, Douwe mentioned problems of having a lack of network within the branch of industry *production, distribution and trade in electricity, gas, steam and air*. This was one of the problems he experienced when developing the EO solar, wind and storage. Ward has a diverse network of different people of potential customers, an entrepreneur and VLT contacts without have been active within this branch which



points out a diverse network. This diversity could have been of influence on the scope of the potential opportunities.

## 5.2. Influence on the intensity of the potential opportunities

The intensity of the potential opportunities within the process of the novice entrepreneurs is only influenced by **prior knowledge**. In Table 14 an overview of the intensity is presented.

	Mark	Ward	Douwe	Fred	Henk
<i>Intensity of the potential opportunities (#)</i>	6	10	2	2	1

**Table 14: intensity of the potential opportunities of every novice entrepreneur**

*Varied business and working experience* has a negative effect on the intensity of the potential opportunities. The intensity of the younger entrepreneurs Mark (6) and Ward (10) is much higher compared to the other novice entrepreneurs (1 or 2) with extensive varied business and working experience. Their cognitive framework is more focused which create boundaries and limits the intensity of the potential opportunities. Besides that they are able to make decision before consider it as an entrepreneurial opportunity. The younger novice entrepreneurs do not have these boundaries, which stimulates creativity to increase the intensity of the potential opportunities. These boundaries were not expected compared to the patterns entrepreneurs are able to recognise from their cognitive framework as described in section 2.1. Furthermore no relation between fascination and fun or educational activities with the intensity is identified.

There is no relation identified between personal traits and the intensity of the potential opportunities. As already described in section 5.1 Ward scores high on openness and agreeableness. This implicates creativity and optimism what could influence the intensity in a same way it influenced the scope. But Mark should score in a comparable way as Ward because his intensity is much higher as well. When looking at the scores in Table 13 no patterns are identified and therefore personal traits not influence the intensity. Social networks not influence the intensity as well.

## 5.3. Influence on the total time spent to come to the final opportunity

The total time spent to come to the final opportunity is almost equal for every novice entrepreneur, except for Douwe as presented in Table 15. This can be caused by insecurity determined from his personal traits. Douwe's total time to come to his entrepreneurial opportunity is much longer compared with the other entrepreneurs. Douwe needed 68 weeks where the other novices needed 32 till 40 weeks. Doeko's scores on personal traits are much lower compared with the other novice entrepreneurs as presented in Table 13. The low scores could be caused by an insecure or humble attitude of Douwe, which postponed his decision. Doeko confirmed this insecurity during his interview and mentioned it as one of the reasons to participate within VLT. Nevertheless, there are possible more reasons to postpone his decision. This could be optimism or a lack of knowledge. Optimism would implicate a high score on openness. Doeko's score on openness is relatively high (2.6) but much lower compared with the other novice entrepreneurs. This would be too suggestive. A lack of prior knowledge could influence the time for a specific opportunity but cannot be related with the total time spent. These possible influences are based on too many assumptions. Therefore no relations are identified between background variables and the total time spent to come to the final opportunity.

	Mark	Ward	Douwe	Fred	Henk
<i>Total time spent to come to the final opportunity (weeks)</i>	36	36	68	32	40

**Table 15: Total time spent to come to the final opportunity of every novice entrepreneur**

#### 5.4. Influence on the time spent on the potential opportunities

**Prior knowledge** and **personal traits** influences the time spent on the potential opportunity. There is no influence identified from social networks. In Table 16 the time spent is presented for every entrepreneurial opportunity. Mark (6) and Ward (10) have the highest intensity of entrepreneurial opportunities as already described in section 5.2. They spent only a few days on most of the entrepreneurial opportunities they recognised. They spent more time on the opportunities when they have the feeling it is a high potential opportunity. Douwe, Fred and Henk recognised only a few opportunities but spent more time on exploring these opportunities. Because of their experience and the lower intensity they spent more time on a limited amount of opportunities as described in section 5.2. Fred's first entrepreneurial opportunity is considered as an exception because it was not his intention to exploit this opportunity (set up a bank). The difference between these novice entrepreneurs is the level of *varied business and working experience*. The higher level of prior knowledge and experience makes it possible to judge faster and do not consider some opportunities as entrepreneurial opportunities. Mark and Ward need some time to find out if an opportunity really is a suitable entrepreneurial opportunity for them. This can be related to the conclusions of Baron & Ensley (2006) where experienced entrepreneurs have a more refined cognitive framework which lead to the advantage of being able to choose the opportunities most likely to lead to a profitable new venture. These results are based on the comparison between experienced and novice entrepreneurs but can be related with the results found on the total time spent on the potential opportunities of the novice entrepreneurs within this research.

The insecurity of Douwe, as mentioned in section 5.3, and the lack of prior knowledge influenced the time spent on his first entrepreneurial opportunity. His social network could have played a role as well. Nevertheless, this is more on judging the opportunity and therefore only elaborated in section 5.6. Douwe showed insecurity with his low scores on the big five and what he mentioned during the interview. This insecurity postponed his decision to move away from EO 1.

Opportunity/ time spent	Mark	Ward	Douwe	Fred	Henk
1	5 days	6 days	45 days	2 days	10 days
2	6 days	3 days	20 days	20 days	
3	6 days	15 days			
4	6 days	3 days			
5	5 days	10 days			
6	20 days	3 days			
7		4 days			
8		2 days			
9		30 days			
10		3 days			

Table 16: comparison between times spent on potential opportunities

### 5.5. Influence on the nature of the potential opportunities

Every novice entrepreneur focuses on different attributes as reason and motivation to choose the potential opportunities. The scores of the nature of the potential opportunities are presented in Table 17. There are two differences identified. These are caused by personal traits and prior knowledge.

Every novice entrepreneur valued the attribute solving a customer's problem high except for Fred. He mentioned during the interview he is very impatient. When comparing this with the personal traits in Table 13 a low score on agreeableness (2.2) is identified. The other novice entrepreneurs have higher scores on agreeableness except for Douwe. This score is not taken into account because he scores very low on every trait. With this score he shows he is more independent and focused on his own interest. He acts more as an independent person instead taking the environment into account. This leads to the conclusion that the **personal trait agreeableness** influences his focus on the attribute solving a customer's problem.

The three low scores of Henk is the second difference. Manageable risk probably is lower because of his extensive varied business and working experience where risk makes him less nervous compared to the other entrepreneurs. The last two attributes superiority of product or service and the potential to change the industry score low for the other novice entrepreneurs where Henk scores higher on these attributes. Where the other novice entrepreneurs give it the lowest score, Henk values it at three. Henk showed in his process and by describing his background variables he is an idealistic person. Within his search for technological opportunities he is clearly focused on sustainable energy. By describing his **fascination and fun** he is also very clear and determined about aspects like avoiding existing pathways, and sustainable use of the planet. This idealistic view is stronger than other novice entrepreneurs and influences his process of recognition and development of an entrepreneurial opportunity. This fascination causes a higher drive to find a superior product or potential to change the industry.

Nature of the opportunities	Mark	Ward	Douwe	Fred	Henk
<i>Solving a customer's problem</i>	4	5	5	2	5
<i>Ability to generate positive cash-flow</i>	4	5	5	5	5
<i>Manageable risk</i>	3	3	3	4	2.5
<i>Superiority of product/service</i>	2	2	2	2	3
<i>Potential to change the industry</i>	2	1	2	1	3

Table 17: nature of the opportunity of every novice entrepreneur (5 point likert scale from not important to very important)

### 5.6. Influence on the judgment of the potential opportunities

A relation is identified between **social networks**, the **personal trait neuroticism** and **varied business and working experience** with one of the attributes – *a positive assessment or advice from others* - to judge potential opportunities. In Table 18 the scores of the novice entrepreneurs on the attributes to judge potential opportunities are presented.

Ward scores high (5) on the attribute *a positive assessment or advice from others*. The other novice entrepreneurs score lower on this attribute. Ward states this attributes as the most important attribute for him. Ward described in his social network five different weak ties. These weak ties provide him information or confirmation on his entrepreneurial opportunities. Siete gives him advice as an entrepreneur and Raymond as a coach to make decisions. The other three weak ties give advice as a potential customer how to develop his business plan. This search for advice and confirmation can be caused by insecurity or a lack of knowledge

(varied business and working experience) of that specific opportunity. Neuroticism points out insecurity as defined in section 2.2. Ward's score on neuroticism is higher compared to the other novice entrepreneurs, which points out more insecurity.

Mark scores a little bit lower on neuroticism. Nevertheless, Mark shows in his social network he also is searching for positive assessment or advice from others. Mark described in his social network two strong ties and one weak tie as the most important contacts for his recognition and development of his entrepreneurial opportunity. Strong ties are important because of the trustworthy as stated in section 2.2. Mark uses his strong ties as sounding board and to evaluate his opportunities. His important weak tie is his VLT coach who guides him through this process and gives him advice as well. His interview supports these findings. He stated for all of his opportunities he searched for feedback to finally come to the suitable entrepreneurial opportunity. Opposite these findings he scores the positive assessment and advice from others as least important attribute. Based on the already described findings this was not expected. This could point out a more secure personality or he is not aware of asking this feedback.

Continuing on the difference between the two younger novice entrepreneurs Ward and Mark and the novice entrepreneurs with extensive varied business and working experience a difference in using their social networks is identified. As described the younger entrepreneurs use their social networks – aware or not - more as a sounding board and as confirmation on their opportunities. The older entrepreneurs use it more as business development or to find potential partners. When looking at the social networks of Douwe, Fred and Henk their contacts are all weak ties. These weak ties are interesting because the ability to help developing their business as potential partner, developer or bringing them in contact with other people. Douwe and Fred also mention their coach, which is not remarkable because their coaches are closely involved within the process of recognition and development of the entrepreneur. The scores of the other novice entrepreneurs on the positive assessment and advice from others support this.

Taken these aspects into account there is a relation between the personal trait neuroticism and varied business and working experience that influence the use of social networks. When being more insecure and having limited varied business and working experience it is more likely to use the social network more as a sounding board. Therefore the positive assessment or advice from others becomes an important attribute to judge the potential opportunity.

<b>Judgment of the opportunity</b>	<b>Mark</b>	<b>Ward</b>	<b>Douwe</b>	<b>Fred</b>	<b>Henk</b>
<i>Favourable Financial model</i>	3	4	3	5	4
<i>Positive assessment or advice from others</i>	2	5	1	3	1.5
<i>How novel the opportunity is</i>	2	3	5	2	5
<i>Existence of a large untapped market</i>	4	5	3	4	5
<i>Intuition or gut feeling</i>	4	4	5	4	5

**Table 18: Judgment of the opportunities of every novice entrepreneur (5 point likert scale from not important to very important)**

The scores on the other attributes of judgement of the opportunities have some differences but no clear relations with background variables can be made. Most of the novice entrepreneurs value the favourable financial model as medium important. Fred values it as most important which can be clarified with the arguments already given he is more focused on his own interest related to his agreeableness. Based on the finding of Baron & Ensley (2006) it could be expected that the scores on novelty of the opportunities would score high for the novice entrepreneurs but the scores are divided. The scores of Douwe and Henk are high (5)

where the others score lower (2 or 3). This separation cannot be clarified by the influence of one of the background variables although there are some differences in types of opportunities they try to recognise. Within the scope of the potential opportunities Douwe and Henk searched for high technology related opportunities like sustainable energy solutions. The other entrepreneurs are less focussed on these complex technologies but more focused on existing concepts. This could explain the high scores on the novelty of the opportunity. The scores on *intuition and gut feeling* support the findings of Baron & Ensley (2006) about the focus of novice entrepreneurs on this attribute.

### 5.7. Overview relations background variables and dimensions

For every dimension is described which background variable this dimension is influenced by and what the effects were on the different novice entrepreneurs. In Figure 12 the relations between the background variables and the dimensions of the process are presented to give an overview of the differences of influence of the background variables.

The case studies identified a direct influence between prior knowledge and the dimensions: scope, intensity, time spent and the nature of the potential opportunities. An indirect influence was recognised between prior knowledge and social networks and the judgment of the opportunities. The case studies identified a direct influence between personal traits and the dimensions: scope, time spent and the nature of the potential opportunities. An indirect influence was recognised as well between personal traits and social networks and the judgment of the opportunities. Social networks influence the scope of the potential opportunities. Furthermore, in relation with prior knowledge and personal traits, social networks influence the judgment of the potential opportunities as well. The thick arrows show the strongest relations. These relations are based on patterns identified based on two or more novice entrepreneurs. The thin arrows show relations based on one novice entrepreneur. Prior knowledge is the background variable with the most influence on the dimensions, followed by personal traits and social networks.

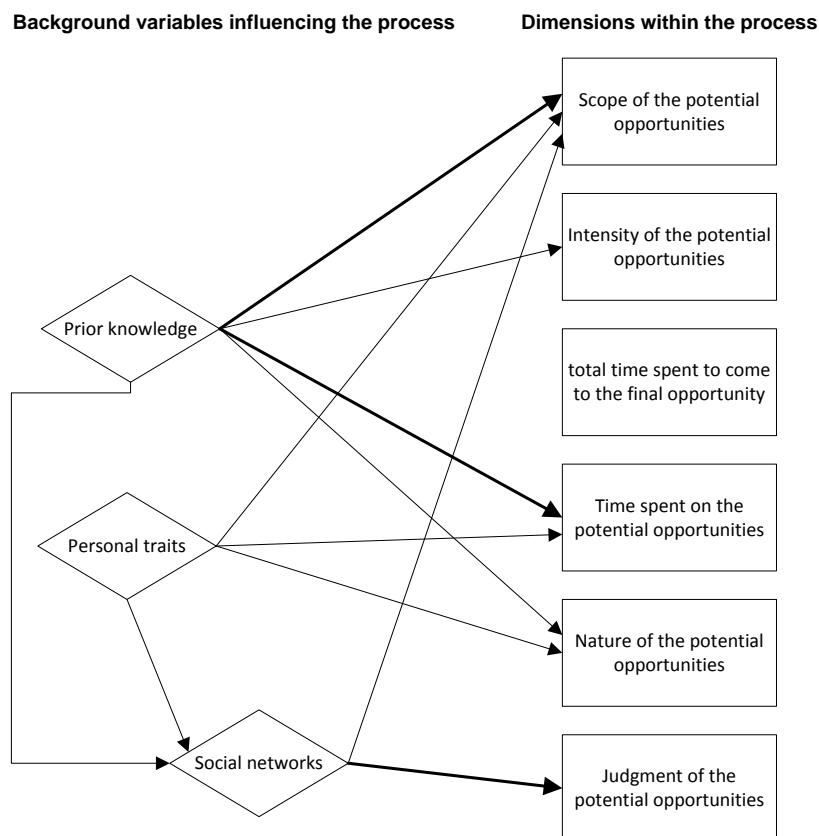


Figure 12: relations between background variables and dimensions



## 6. Conclusions

---

In this last chapter the main research question is answered and conclusions are drawn (section 6.1). These conclusions are discussed (section 6.2) and recommendations are given (section 6.3). Finally implications for further research are presented (section 6.4).

### 6.1. Conclusion

The background variables influence the dimensions of novice entrepreneurs in many different ways. After answering the three sub-research questions in the previous chapters the main research question can be answered where it was formulated in chapter one as:

- ***What is the influence of differences in backgrounds on the process of recognition and development of the entrepreneurial opportunity of novice entrepreneurs?***

The answers on this question are elaborated below for every background variable followed by the general conclusion.

#### Prior knowledge

Prior knowledge has the highest impact on the process of recognition and development of the novice entrepreneurs. Prior knowledge plays an important role to construct the cognitive framework of the novice entrepreneurs. The novice entrepreneurs try to recognise and develop their entrepreneurial opportunity from this framework. Prior knowledge type 2, *varied business and working experience*, has the most influence on this cognitive framework. The final entrepreneurial opportunities of Douwe and Fred where both recognised and developed from a clearly defined framework in the branch *construction* and *wholesale and retail trade, repair of motor vehicles*. They connected this with other developments based on e-commerce and engineering. Henk's framework was comparable where he connected problems he experienced as an interim manager with the demand of companies he wants to work for. Mark and Ward's frameworks are more based on *educational activities* because a lack of extensive varied business and working experience. This causes a more open cognitive framework with fewer boundaries which influences the scope, intensity and time spent on the potential opportunities. This leads toward the following conclusion:

- Varied business and working experience constructs the cognitive framework from where novice entrepreneurs recognise and develop their entrepreneurial opportunity. Novice entrepreneurs without such extensive varied business and working experience construct their framework by educational activities. Educational activities are mostly less specialised. This leads to a broader scope and higher intensity of potential opportunities. For novice entrepreneurs with extensive varied business and working experience, it is difficult to move away from their branch of industry they are working in. This causes a lower intensity of potential opportunities as well. The richness of the cognitive framework formed by educational activities is lower. Therefore novice entrepreneurs with less varied business and working experience spent more time on different potential opportunities.

Fascination and fun influences the process of recognition and development as well. As already stated in section 5.1. fascination is more important than fun. Fascination motivates the entrepreneurs, which drive them and give direction within their process. This influences the scope of the potential opportunities. Fascination limits the scope because they focus on one branch of industry or subject. The nature of the opportunity can be influenced by fascination, although this is only identified with one novice entrepreneur. Henk focuses more on the more idealistic attributes like *the potential to change the industry* compared with the other entrepreneurs. Furthermore the novice entrepreneurs mention fascination as a very important driver for them. When a novice entrepreneur becomes older and has more life experience his fascination becomes stronger where this is

identified at Henk and to a lesser extent with Douwe and Fred where it is least strong at Mark and Ward. This leads towards the following conclusion:

- Fascination is a very important driver and becomes stronger as novice entrepreneurs collect more life experience. It limits the scope and can influence the nature of the potential opportunities within the process of recognition and development.

Prior knowledge plays an important role as background variable for the novice entrepreneurs and influences the process on different ways, depending on the prior knowledge. A notable aspect they all stated during the research is that they all focus on *who they are and what they know* as a starting point and guidance for their entrepreneurial opportunities, which is related to the varied business and working experience, educational activities and their fascination.

### **Personal traits**

Personal traits are very diverse for every novice entrepreneur. This makes it difficult to identify grounded relations between personal traits and dimension within the process of recognition and development. Nevertheless relations are identified where traits influence several dimensions directly and indirectly.

A relation between openness and the scope of the potential opportunities is identified. Ward scores high on openness that represents creativity. This creativity is likely to broaden the scope of the potential opportunities. This can activate the virtuous cycle (Zahra, 2008) and increases the change to find an entrepreneurial opportunity. The other entrepreneurs show the opposite with a lower score on openness and a narrow scope. Although the relation between creativity and the scope of novice entrepreneurs is only based on one entrepreneur it can be concluded as a likely relation. This leads to the following conclusion:

- The personal trait creativity is likely to broaden the scope of potential opportunities of novice entrepreneurs. The virtuous cycle can be activated which increases the chance to find their entrepreneurial opportunity.

Solving a customer's problem is an important attribute as nature of the potential opportunities to focus on as an entrepreneur (Baron & Ensley, 2006). The novice entrepreneurs within this research confirm this, except for Fred. Although novice entrepreneurs not always focus on the same attributes, it is a notable difference. On the other hand Fred shows a low score on agreeableness, which represents more focus on his own interest. This personal trait influence Fred's focus on solving a customer's problem. Because this is only based on one novice entrepreneur, prudence is important before drawing general conclusions. Therefore the following conclusion is drawn:

- Novice entrepreneurs who score low on agreeableness are more focussed on their own interest and therefore may focus less on solving a customer's problem.

Douwe scores low on agreeableness as well, but on the average his scores on the big five are much lower. This represents an insecure behaviour, which is identified during the interview as well. The insecurity of Douwe increased the time spent on one potential opportunity. When looking at the opportunity Douwe tried to develop during his process (Solar, Wind and Storage) it was an opportunity outside his branch where he has his varied business and working experience. Therefore the following conclusion can be drawn:

- Insecurity can increase the time spent on one potential opportunity by postpone the decision whether or not to continue with the opportunity.

Personal traits do have influence on the process of recognition and development but are more difficult to ground within this case study research.



## Social networks

As described in chapter 5 and presented in Figure 12 social networks influence the scope of the potential opportunities. Furthermore social networks are influenced by prior knowledge and personal traits from where it influences the judgment of the potential opportunities.

Social networks influence the scope of the research. Social networks of novice entrepreneurs are often focussed on the branch of industry they have varied business and working experience. This limits the diversity of the network and therefore the diversity of information. An important way of collecting information for the potential opportunity is via the social network (Shane, 2003). This limited diversity is presented by a lack of structured holes within the networks of Mark, Fred and Henk. Douwe presented a network with many structured holes, but he mentioned the problems of having a lack of network within the branch of industry *production, distribution and trade in electricity, gas, steam and air*. Therefore he came back within his network build in the branch construction added by support from VLT. Ward showed a diverse network including potential customers, an entrepreneur and VLT contacts. Ward's diverse network stimulated his process of recognition and development and influenced his scope. Therefore the following conclusion is drawn:

- A diverse network can broaden the scope of the potential opportunities. When novice entrepreneurs have extensive varied business and working experience it is difficult to build up a diverse network outside these branches. Younger entrepreneurs with fewer varied business and working experience have a more varied social network. This is not focussed in one branch of industry. This creates possibilities to collect diverse information and develop the opportunity within a broad network. Therefore it broadens the scope of recognition and development of the entrepreneurial opportunity.

The second relation identified between social networks and another dimension of the process of recognition and development is with the judgment of an entrepreneurial opportunity. Social networks, which influence the judgment, are not independent but influenced by the personal trait insecurity and varied business and working experience. Insecurity (identified by a high score on the personal trait neuroticism) and varied business and working experience influence the way novice entrepreneurs use their social networks. This affects the judgment of the potential opportunities. The positive assessment or advice from others is more important when novice entrepreneurs are insecure and have no varied business and working experience within the branch of industry of the potential opportunity. This leads to the following conclusion:

- Novice entrepreneurs use social networks more as a sounding board when they are insecure and have a minimal varied business and working experience within the branch of industry they judge a potential opportunity. They find a positive assessment or advice from others important. Novice entrepreneurs who are more secure or with an extensive varied business and working experience use their social networks to find potential partners and develop their business.

## General conclusion

In general the conclusion can be drawn that a lot of different background variables influence the process of recognition and development of the entrepreneurial opportunity of a novice entrepreneur. Prior knowledge creates the biggest differences within the process and its dimensions. A clear distinction is presented between the two younger entrepreneurs Mark and Ward and the three older entrepreneurs Douwe, Fred and Henk. The extensive varied business and working experience gave the older entrepreneurs a rich framework but with certain boundaries. The cognitive framework of the younger entrepreneurs was mostly fed by the educational activities with a broader scope and higher intensity. Personal traits influence the dimensions within the process as well, but all in very different ways. Therefore the influence on the different dimensions seems to have less impact on the dimensions. Nevertheless personal traits like creativity and confidence are likely to influence the dimension scope and focus on the nature of the potential opportunities. Social networks influence the scope and judgment of potential opportunities. The novice entrepreneurs use their social networks in a different way.

Unfortunately it is not able to conclude which type of cognitive framework or personal trait is better or desirable in a standard situations. Therefore the success of these novice entrepreneurs must be taken into account.

## 6.2. Discussion

In this section the conclusions and shortcomings of this research are discussed. The first point of discussion is the theoretical replication as described in section 3.1.1. The case studies within this research were selected to achieve theoretical replication. The cases could produce contrasting results but for predictable reasons. For most conclusions it was possible to ground conclusion on more than one entrepreneur and identify theoretical replication. For the conclusions about the influence of prior knowledge and social networks on the dimension of the process of recognition and development theoretical replication is achieved. Where the novice entrepreneurs show similarities there is at least one novice entrepreneurs for every conclusion who shows contrasting results. Personal traits are very diverse and therefore it is difficult to find comparable patterns including contrasting results. Although the personal traits are limited to the big five, it still gives many possible relations. The big five represent groups of characteristics. E.g. Creativity is stated by Ardichvili (2003) as an important trait to recognise opportunities and is related to openness. This creativity broadens Ward's scope and the other entrepreneurs show the opposite. To make it more grounded, similar patterns should be identified, which was not always possible. Nevertheless, these conclusions are valuable to mention because the influences identified are present within these cases.

The process of recognition and development of the novice entrepreneurs is researched within a certain period of time. Within this time period the novice entrepreneurs described their process of recognition and development. The starting point and end point were clearly defined when the process started and when the novice entrepreneurs started exploiting their entrepreneurial opportunities. Nevertheless, it is not possible to conclude about what is right or wrong. It is unknown what the success will be of the novice entrepreneurs in the future. The novice entrepreneurs' final opportunities are adopted as suitable opportunities. Nevertheless it could be possible that neither one of the entrepreneurs succeed.

Social networks can be used for different purposes. The younger novice entrepreneurs use their social networks as source of information and sounding board. The more experienced novice entrepreneurs use it more as possibilities to develop their opportunity. The actual use of the actors within the social networks could not taken into account. Again this is a matter of success that must be measured. There is a possible difference between actors within the network of the entrepreneurs with extensive experience and the less experienced entrepreneurs. When they actually want to develop their business the ties within the network of the experienced entrepreneurs can be much stronger which leads to more successful development. The discussion about the use of the network is moving towards the exploitation phase where this falls outside the scope of this research.

Another aspect is the richness of the cognitive framework. According to Baron & Ensley (2006) the richness of the cognitive framework makes it possible for the novice entrepreneurs to recognise patterns between different items or problems. Other entrepreneurs are not able or it is more difficult for them to recognise these patterns. In this research is shown that this richness creates boundaries according to the scope. The richness and narrow scope can lead to better results. Success must be taken into account to identify this effect.

The five researched novice entrepreneurs are all participants of VLT. Although it is a good representation for novice entrepreneurs in general this can have influence on the results of this research. The training, coaching and access to regional networks can influence the process of the novice entrepreneur. Results present novice entrepreneurs come back within the branch of industry they are active. Personal coaching can influence this. They also all followed a training of Sarasvathy where she elaborated on who am I, what do I know and whom do I know. On the other hand the novice entrepreneurs with extensive varied business and working experience tried to move away from their existing branch of industry where this does not fit with the theory of Sarasvathy.

E.g. Douwe wanted to move away because of frustrations within his branch of industry. By experiencing this process themselves they probably get motivated again to recognise and develop entrepreneurial opportunities within their existing branch of industry. Therefore VLT not influenced the results and conclusions of this research in a significant way.

For some background variables it was difficult to identify the influence on the dimension. The background variables were approached as independent variables to identify what the influence was on the dimension. For some variables in relation with the dimension it is possible they are indirectly influenced by other variables as well. A clear relation was identified between the prior knowledge and personal traits, which influenced the social network. When this had been taken into account, it would be very difficult to identify clear relations between the background variables and the different dimensions. It would become too complex and blurry this was taken into account.

### **6.3. Recommendations**

Novice entrepreneurs who start their process of recognition and development of an entrepreneurial opportunity have to take into account that there are a lot of background variables that can influence their process. There is no single route towards a successful entrepreneurial opportunity as no right or wrong can be described. The diversity within the background variables allows many choices depending on the situation and the desire of the novice entrepreneur. To make these choices recommendations are presented. VLT can use these recommendations to guide novice entrepreneurs within their program to recognise and develop their entrepreneurial opportunity. Of course novice entrepreneurs can take these recommendations into account as well. The recommendations are organised according to the background variables.

#### **Prior knowledge**

Prior knowledge has shown to be the background variable with the most impact on the process. Therefore it is important to consider for novice entrepreneurs what their prior knowledge is about. The novice entrepreneurs can analyse their prior knowledge according to the three types used within this research. When entrepreneurs know their background variables they can make choices depending on what they want to achieve.

When novice entrepreneurs have extensive varied business and working experience it is difficult to move away from the branches of industry they collected this experience. It is likely they have a narrow scope and find an entrepreneurial opportunity within these branches. To save time they first can explore entrepreneurial opportunities within these branches. When they want to move away from their existing branches of industry they must be aware of their narrow scope. They can compensate this narrow scope by adding extra time or by other background variables like creativity or a diverse social network. When novice entrepreneurs have less varied business and working experience they have a broad scope. They must be careful that this scope stays too broad because finally a decision has to be made. Their fascination & fun and educational activities play a more important role.

Fascination drives many novice entrepreneurs specially when they become older. It can be a useful variable to identify possible entrepreneurial opportunities. When novice entrepreneurs identify what really fascinates them patterns can be identified between unpredictable factors. These fascinations are not the most obvious subjects entrepreneurs focus on during their process and therefore useful to mention.

Novice entrepreneurs with less varied business and working experience tend to have a higher intensity of entrepreneurial opportunities. To manage these opportunities and not spent too much time on every opportunity the opportunities can be prioritised.

## **Personal traits**

Considering who you are as a novice entrepreneur helps the entrepreneur to think about the personal traits he or she possesses. As shown in this research, personal traits can influence the scope, total time spent and the nature of the potential opportunities. By being aware of these personal traits and identify how this affects your process it gives the opportunity to anticipate and navigate it into the direction you want to move. Other people within the inner circle of an entrepreneur or a personal coach can help develop these personal traits in the desired direction.

When entrepreneurs tend to be creative it can broaden their scope. When this broad scope is desirable creativity must be stimulated. When this broad scope becomes too broad, creativity can be more focused on one branch of industry or area of opportunities.

If novice entrepreneurs are focused on their own interest, it is possible they forget to focus on solving the customer's problem. This is an important attribute for successful exploitation of the opportunity. Therefore novice entrepreneurs have to be aware of this personal trait and when necessary focus more on the problems within their environment.

When the total time spent to find your entrepreneurial opportunity is a constraint you have to be self-confident and have knowledge within this branch of industry. When one of these components is missing, you have to take in account that the total time to recognise and develop an opportunity will increase. When the total time is not considered as a constraint this knowledge can be acquired.

## **Social networks**

Considering whom you know within the social network of novice entrepreneurs helps them to think about the people around them who can help develop their business. This can vary from giving feedback on business plans or to become a business partner, customer or supplier.

When the social network of an entrepreneur is concentrated within a branch of industry it is difficult to broaden the scope of potential opportunities. When novice entrepreneurs want to broaden the scope, it can be useful to diversify their social networks. The social networks of younger novice entrepreneurs are mostly more diverse and use it as a sounding board. When they want to use the network more powerful they can consider building stronger relations, or focusing on certain contacts to extend within a specific area.

As younger entrepreneurs use their networks as a sounding board, they collect feedback and information that takes time. Some entrepreneurial opportunities must develop fast because of the environment is developing fast as well. When this is the case, the novice entrepreneur must not postpone his decision too long. Otherwise the novice entrepreneur starts with much competition.

## **6.4. Implications for further research**

In the first chapter of this research a lack of research was introduced about the process of recognition and development of the entrepreneurial opportunity of novice entrepreneurs. The existing literature focused on persons with extensive experience as an entrepreneur and sometimes in comparison with novice entrepreneurs. This research provided answers within the area of opportunity recognition and development for novice entrepreneurs but of course new questions appeared.

Within this research three different variables were studied about their influence on the process of the entrepreneur. Within this explorative study the relations between the background variables and the dimensions were identified, but for every variable it is useful to study these relations in more detail. Especially the personal traits are complex and diverse variables, which can influence the process in many different ways. For every variable a separate research can be started. By studying these relations in more detail it will be possible to test it on big sample groups. Via this quantitative data it will be possible to generalise the findings.

During the research the influence of the background variables on each other appeared. This has been taken into account as well, but the influence of the background variables on each other is an aspect that needs further research. Within this research these relations were not investigated in detail because the variables were considered as independent. Nevertheless a strong relation between social network and the other variables was identified. Therefore a research towards the influence of the background variables on each other would be interesting.

The aspect of success mentioned in the discussion can be researched within a new research. Before executing this research the novice entrepreneurs must get the chance to exploit their entrepreneurial opportunity. Therefore this can only be executed after a few years from now. With a retro perspective view the exploitation phase can be connected to the findings of this research.



## References

- Ardichvili, A., Cardozo, R., & Sourav, R. (2003). A theory of entrepreneurial opportunity identification and development. *Journal of business Venturing* , 18, pp. 105-123.
- Baron, R. (2006). Opportunity Recognition as Pattern Recognition: How entrepreneurs "connect the dots" to identify new business opportunities. *Academy of Management Perspectives* , February, 104-119.
- Baron, R., & Ensley, M. (2006). Opportunity recognition as the detection of meaningful patterns: evidence from comparison of novice and experienced entrepreneurs . *Management Science* , 52 (9), pp. 1331-1334.
- BTEC, F. B. (n.d.). Retrieved April 6, 2010, from website teach me business: <http://www.teachmebusiness.co.uk/page29/page16/page18/assets/Functionalareas.pdf>
- Burt, R. (2000). The network entrepreneur. In R.Swedberg, *Entrepreneurship: the social science view* (pp. 281-307). Oxford: Oxford university press.
- Busenitz, L., West, G., Shepherd, D., Nelson, T., Chandler, G., & Zacharakis, A. (2003). Entrepreneurship Research in Emergence: Past trends and future directions. *Journal of Management* , 29(3), pp. 285–308.
- Bygrave, W. (1993). Theory building in the entrepreneurship paradigm. *Journal of business venturing* , Vol 8, 255-280.
- CBS. (2008). *Standaard Bedrijfsindeling SBI versie 21-07-2008*. Den Haag: Centraal bureau voor de statistiek.
- Choi, Y., Lévesque, M., & Shepherd, D. (2007). When should entrepreneurs expedite or delay opportunity exploitation. *Journal of Business Venturing* , doi:j.busvent2006. 11.001.
- Cooper, D., & Schindler, P. (2008). *Business research methods*. Singapore: McGrwaw-Hill Education.
- Corbett, A. (2007). Learning asymmetries and the discovery of entrepreneurial opportunities. *Journal of business Venturing* , 22, pp. 97-118.
- Davidsson, P. (2004). *Researching entrepreneurship*. Boston: Springer Science & Business Media Inc.
- Davidsson, P., & Honig, B. (2003). The role of social and human capital among nascent entrepreneurs. *Journal of business venturing* , 18, pp. 301-331.
- De Koning, A. (1999). *Conceptualising opportunity formation as a socio-cognitive process*. Stockholm: Centre for advanced studies in leadership.
- Dew, N., Read, S., Sarasvathy, S., & Wiltbank, R. (2009). Effectual versus predictive logics in entrepreneurial decision-making: Differences between experts and novices. *Journal of Business Venturing* , 24, pp. 287-309.
- Eckhardt, J., & Shane, S. (2003). Opportunities and Entrepreneurship. *Journal of Management* , 29(3), 333-349.
- Goldberg, L. (1990). An alternative "description of personality":The big-five factor structure. *Journal of personality and social psychology* , Vol 59, No. 6, 1216-1229.
- Granovetter, M. (1973). The strength of weak ties. *The american journal of sociology* , vol. 78, No. 6, pp. 1360-1380.
- Groen, A., Wakkee, I., & Weerdt-Nederhof, P. d. (2008). Managing tensions in a high-tech start up: an innovation journey in social system perspective. *International Small Business Journal* , Vol. 26, 1, 57-81.

- Judge, T., & Cable, D. (1997). Applicant personality, organizational culture, and organization attraction. *Personnel psychology*, vol. 50, pp.359-394.
- Kirzner, I. (1973). *Competition and Entrepreneurship*. Chicago: University of Chicago Press.
- Myers, M. (2009). *Qualitative research in business & management*. London: SAGE Publications Ltd.
- Phelan, S., & Alder, G. (2005). An experimental study of entrepreneurial exploitation. *paper presented at the anual meeting of the academy of management* (pp. 1-24). Honolulu: HI.
- Sarasvathy, S. D. (2008). *Effectuation - Elements of Entrepreneurial Expertise*. University of Virginia, USA: Edward Elgar publishing limited.
- Sarasvathy, S. (2002). Three views of entrepreneurial opportunity. *Invited book chapter in the Entrepreneurship Handbook*, pp. 1-29.
- Schumpeter, J. (1934). *The theory of economic development*. Cambridge Mass: Harvard University Press.
- Shane, S. (2003). *A general theory of entrepreneurship: the individual-opportunity nexus*. Cheltenham, UK: Edward Elgar.
- Shane, S., & Khurana, R. (2003). Bringing individuals back in: the effects of career experience on new firm founding. *Industrial and corporate change*, Volume 12, number 3, pp. 519-543.
- Shane, S., & Venkataraman, S. (2000). The promise of entrepreneurship as a field of research. *Academy of Management Review*, Vol. 25 (1), pp. 217-226.
- Thompson, E. (2008). Development and validation of an international english big-five mini-markers. *Personality and inividual differences*, 45, 542-548.
- Van Praag, C. (1999). Some Classic Views on Entrepreneurship. *De Economist*, Vol. 147, No.3, 311-335.
- Zahra, S. (2008). The virtuous cycle of discovery and creation of entrepreneurial opportunities. *Strategic Entrepreneurship Journal*, Vol. 2, pp. 243-257.



# Annex

## Annex 1: Data collection Dimensions of the process

Dimension	How to measure	Variables
<b>Scope of potential opportunity</b>	Data coded into branches of industry	<b>Branches of industry:</b> agriculture, forestry and fishing industry; mineral extraction; industry; Production, distribution and trade in electricity, gas, steam and air; Construction; Wholesale and retail trade, repair of motor vehicles; Transport and storage; Hotel & catering, meals and drink provision; Information & communication; Financial Institutions; Real estate rental & trade; Consultancy, research and other specialised business services; Government & compulsory insurance; Education; Health and welfare; Culture, sport and recreation; Other services; Household as employer; Extra-territorial organizations and bodies.
<b>Intensity of potential opportunity</b>	Number of potential opportunities	#
<b>Total time to final opportunity</b>	From point of start till end point	Weeks
<b>Time spent on one opportunity</b>	Average time spent for each opportunity	Days
<b>Nature of the potential opportunities</b>	5 point likert scale	(1) solving a customer's problem, (2) ability to generate positive cash-flow, (3) manageable risk, (4) superiority of product/service, and (5) potential to change the industry
<b>Judgement of potential opportunity</b>	5 point likert scale	(1) favorable financial model, (2) positive assessments or advice from others (friends, financial advisors, and industry experts), (3) how novel the opportunity was, (4) the existence of a large untapped market, and (5) intuition or gut feeling

Table 19: How to collect data on Dimensions of the process of recognition and development

## Annex 2: Data collection background variables

Background factor	How to collect data	How to measure	Variables
<b>PK type 1: fascination &amp; fun</b>	- CV - Interview	Coded into topics	Not pre-formulated (possibilities: sailing, soccer, kiting, traveling, etc.)
<b>PK type 2: business and working experience</b>	- CV - Participant profile survey VLT	-Coded into functional areas, branches of industry and years of experience	<b>Functional areas:</b> sales, marketing, production, R&D, administration, customer service, distribution, finance, HRM, ICT. <b>Branches of industry:</b> agriculture, forestry and fishing industry; mineral extraction; industry; Production, distribution and trade in electricity, gas, steam and air; Construction; Wholesale and retail trade, repair of motor vehicles; Transport and storage; Hotel & catering, meals and drink provision; Information & communication; Financial Institutions; Real estate rental & trade; Consultancy, research and other specialised business services; Government & compulsory insurance; Education; Health and welfare; Culture, sport and recreation; Other services; Household as employer; Extra-territorial organizations and bodies. <b>Years of experience:</b> 0- infinite
<b>PK type 3: educational activities</b>	- CV	- Coded into functional areas and/or branches of industry - divided into level of education	- Functional areas and branches of industry: already mentioned at type 2. - Secondary school, Intermediate vocational education (MBO), Bachelor, Master or PHD.
<b>Personal traits</b>	VLT network survey	Big five personality characteristics model	Extraversion, Emotional stability, agreeableness, conscientiousness and intellectual openness.
<b>Social networks</b>	- Network survey VLT	- Divided into different types of networks - Number of different networks	- Diversity of weak ties - Balance weak vs. strong ties - #: 0,1,2,3,4,5 (maximum of five is measured).

Table 20: how to collect background data

### Annex 3: Survey Big Five

Please use the below list of common human traits to describe yourself as accurately as possible. Describe yourself as you really are compared to other people you know of the same age and sex, not as you wish to be. Please rate each of the characteristics in terms of how accurately (or inaccurately) it describes you.

	Inaccurate					Accurate						Inaccurate					Accurate					
	1	2	3	4	5							1	2	3	4	5						
01. Shy	0	0	0	0	0							21. Jealous	0	0	0	0	0					
02. Talkative	0	0	0	0	0							22. Unenvious	0	0	0	0	0					
03. Energetic	0	0	0	0	0							23. Moody	0	0	0	0	0					
04. Quiet	0	0	0	0	0							24. Unanxious	0	0	0	0	0					
05. Extraverted	0	0	0	0	0							25. Efficient	0	0	0	0	0					
06. Outgoing	0	0	0	0	0							26. Disorganised	0	0	0	0	0					
07. Reserved	0	0	0	0	0							27. Careless	0	0	0	0	0					
08. Untalkative	0	0	0	0	0							28. Untidy	0	0	0	0	0					
09. Creative	0	0	0	0	0							29. Neat	0	0	0	0	0					
10. Intellectual	0	0	0	0	0							30. Inefficient	0	0	0	0	0					
11. Unimaginative	0	0	0	0	0							31. Systematic	0	0	0	0	0					
12. Artistic	0	0	0	0	0							32. Organised	0	0	0	0	0					
13. Intelligent	0	0	0	0	0							33. Kind	0	0	0	0	0					
14. Philosophical	0	0	0	0	0							34. Sympathetic	0	0	0	0	0					
15. Deep	0	0	0	0	0							35. Harsh	0	0	0	0	0					
16. Uncreative	0	0	0	0	0							36. Cooperative	0	0	0	0	0					
17. Envious	0	0	0	0	0							37. Unkind	0	0	0	0	0					
18. Emotional	0	0	0	0	0							38. Warm	0	0	0	0	0					
19. Anxious	0	0	0	0	0							39. Rude	0	0	0	0	0					
20. Unworried	0	0	0	0	0							40. Inconsiderate	0	0	0	0	0					

## Annex 4: Survey social network

Please name the contact that played the most important role for the development of your venture (please only mention contacts that are not part of the start-up team)?

Name:

Primary occupation of contact 1

- ☐ VLT participant
- ☐ VLT Coach
- ☐ VLT Trainer
- ☐ External contact (outside VLT)

Who took the initiative to make the contact?

- ☐ I took the initiative to contact the contact
- ☐ The contact contacted me
- ☐ I asked a referral to make the initial connection
- ☐ A referral took initiative to make a first connection
- ☐ Other, namely

What was the background/reason why you contacted contact 1/why contact 1 contacted you?

Why did contact 1 play an important role for your venture /what was the primary contribution of contact 1 to your venture?

Was the contact a new contact or do you have an existing relation to contact 1?

- ☐ New contact
- ☐ Existing contact

How would you describe the nature of the relation to contact 1

- ☐ Spouse partner
- ☐ Family member
- ☐ Business associate
- ☐ Prior colleague
- ☐ Friend
- ☐ Acquaintance

For how many years have you known contact 1?

On average, how often do you have contact with contact 1?

How well do you know contact 1?

Was there a referral involved in making the connection to contact 1? If yes, continue with next questions. If no, continue with next contact.

Referral name:

Primary occupation of the referral:

Position of the referral in relation to vlt

What was the background/reason why you contacted the referral/why the referral contacted you?

Was the referral a new contact or do you have an existing relation to the referral?

How would you describe the nature of the relation to the referral?

☐ Other, namely

- ☐ Once a day
- ☐ Once a week
- ☐ Once a month
- ☐ Once a year
- ☐ Other, namely

- ☐ Very well
- ☐ Somehow
- ☐ Very little

- ☐ Yes
- ☐ No

- ☐ VLT participant
- ☐ VLT coach
- ☐ VLT trainer
- ☐ External contact (outside VLT)

- ☐ New contact
- ☐ Existing contact
- ☐ Spouse/partner
- ☐ Family member

- ☐ Business associate
- ☐ Prior colleague
- ☐ Friend
- ☐ Acquaintance
- ☐ Other, namely

For how many years have you known the referral?

On average, how often do you have contact with the referral?

- ☐ Once a day
- ☐ Once a week
- ☐ Once a month
- ☐ Once a year
- ☐ Other, namely

How well do you know the referral?

- ☐ Very well
- ☐ Somehow
- ☐ Very little

Was there a second contact that played an important role for the development of your venture in the last 2 months? If Yes, start the questions again. If no, continue with the last question.

- ☐ Yes
- ☐ No

Please indicate how well all mentioned contacts know each other

Scale from 0 to 7

## Annex 5: Interview script

Face	Objectives	Questions	check
Introduction	Introduction of the interviewer, the research objective, the purpose of the interview and some definitions.	Definitions: Entrepreneurial opportunity, entrepreneurial process.	

<b>Process</b>	Let the novice entrepreneur draw his/her own process of recognising and developing his/her entrepreneurial opportunity	<ul style="list-style-type: none"> <li>- Can you describe the process of recognising and developing your entrepreneurial opportunity?</li> <li>- Can you draw the process along a timeline or in a picture to make it visible?</li> </ul>
<b>Additional questions</b>	To be sure to cover all dimensions and as guide for the interview	<p><b>Scope:</b></p> <ul style="list-style-type: none"> <li>- Can you describe the topic of every entrepreneurial opportunity, which appeared in the process?</li> </ul> <p><b>Intensity:</b></p> <ul style="list-style-type: none"> <li>- How many entrepreneurial opportunities appeared in the process?</li> </ul> <p><b>Total time:</b></p> <ul style="list-style-type: none"> <li>- When was the starting point of the process of searching your opportunity?</li> <li>- Have you found your opportunity? When was this moment you decided to start exploring this opportunity?</li> </ul> <p><b>Average time:</b></p> <ul style="list-style-type: none"> <li>- How much time have you spent on each opportunity in days?</li> <li>- Was this time more for one than another one? Why?</li> </ul> <p><b>Nature:</b></p> <ul style="list-style-type: none"> <li>- What is the importance of the attributes when you identify (nature) an entrepreneurial opportunity? (Five point likert scale)</li> </ul> <p><b>Judgment:</b></p> <ul style="list-style-type: none"> <li>- What is the importance of the attributes when you judge an entrepreneurial opportunity? (Five point likert scale)</li> </ul>
<b>Connection</b>	Identify their opinion what influenced his/her process of recognising and developing the opportunity	<ul style="list-style-type: none"> <li>- How have you recognised these opportunities?</li> <li>- What do you think was crucial in finding your entrepreneurial opportunity? Why?</li> </ul>
<b>Background</b>	Collect data prior knowledge type 1- Fascination and fun	<ul style="list-style-type: none"> <li>- Have you acquired extensive knowledge on specific aspect outside working experience like a hobby or other side activities?</li> </ul>
<b>Summary</b>	Summarise conversation and check if he clarified everything well and understand well	

Table 21: Interview script

## Annex 6: Comparing scope of the process

Branches of industry →	Varied business and working experience	Educational activities	Scope of potential opportunities	Final opportunity
<b>Mark</b>	Information & Communications; culture, sports & recreation	Information & Communications	Information & communication; Wholesale and retail trade, repair of motor vehicles	Information & communications
<b>Ward</b>	Consultancy, research and other specialised business services	No specific branch	7 different branches	Wholesale and retail trade, repair of motor vehicles; Consultancy, research and other specialised business services
<b>Douwe</b>	Construction	Construction	Production, distribution and trade in electricity, gas, steam and air; construction	Construction
<b>Fred</b>	Wholesale and retail trade, repair of motor vehicles; Financial institutions	Wholesale and retail trade, repair of motor vehicles	Wholesale and retail trade, repair of motor vehicles; Financial institutions	Wholesale and retail trade, repair of motor vehicles
<b>Henk</b>	Consultancy, research and other specialised business services; Financial institutions; Information & communication; Government & compulsory insurance	No specific branch	Consultancy, research and other specialised business services; oriented within production, distribution and trade in electricity, gas, steam and air	Consultancy, research and other specialised business services

Table 22: comparison branches of industry