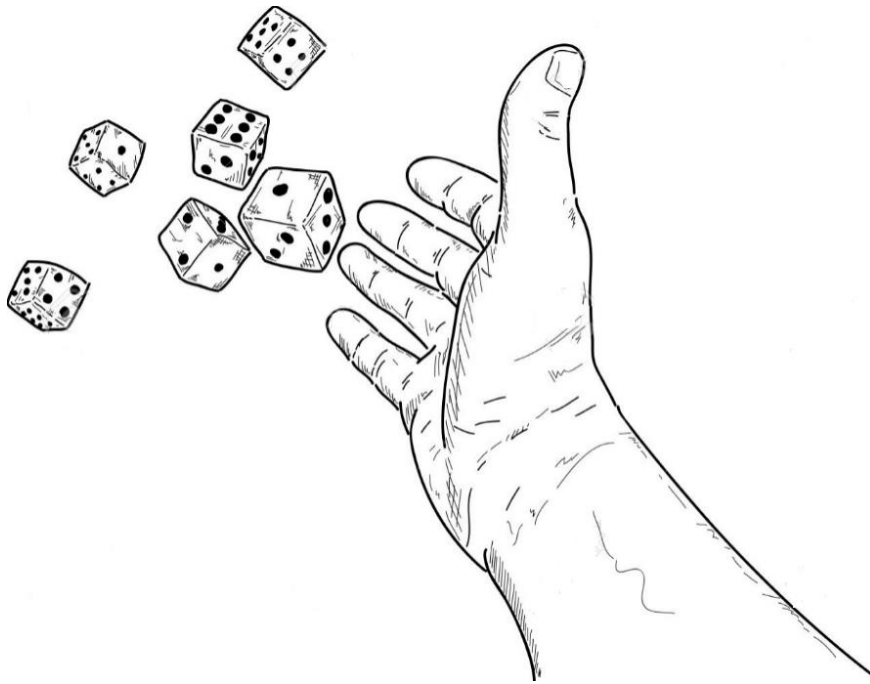


Sustainable entrepreneurship as a game of chance

-A narrative approach on the role of contingency in opportunity formation-



Master thesis

Copernicus Institute of Sustainable Development

Department Innovation, Environmental and Energy Sciences

Innovation Sciences

Author: J.P. Komen

Student-ID: 3669955

Date: 13-08-2016

E-mail: johnpaulkomen@gmail.com

Supervisor: prof.dr.ir. R.P.J.M. Raven

Second reader: dr. A.M. Herrmann



Universiteit Utrecht

"Better an ounce of luck than a pound of gold" -Yiddish proverb

Abstract

Contingency as explanatory factor in the process of opportunity formation is currently more or less overlooked in entrepreneurship literature. The aim of this qualitative project is to illustrate the role of contingency as a potential explanatory factor in the process of opportunity formation. This project, by using the narrative approach, contributes to existing literature by showing that contingency is a relative large explanatory factor in the process of opportunity formation compared to other factors which can be fully controlled. A research sample of sixteen entrepreneurial interviewees and three facilitating interviewees indicated that especially in starting the entrepreneurial process and in the beginning of this entrepreneurial process contingency is considered to play an influential role. Moreover, it is considered that contingency is to a certain degree controllable and can be planned up to a certain point. Therefore, sustainable entrepreneurs can to a certain degree influence the role of contingency in their opportunity formation. From a policy perspective, it might pay off to invest in the entrepreneurial ecosystem instead of investing in a few predefined entrepreneurial 'winners' startups. It seems almost impossible to predict a startup's success beforehand, because many unpredictable factors could play a significant role in the entrepreneurial process and possible success. From a managerial perspective, awareness about the potential far-reaching consequences of contingency should be spread. Decent risk management can influence indirectly the consequences of contingency.

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During the last challenging couple of months, completing this project almost felt like running a startup myself (without consuming the incubator's free coffee and table-tennis table)! And just like running a startup, writing a master thesis is not possible without the support of special people.

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1) Introduction

Entrepreneur Steve Jobs did not want to attend Berkeley and Stanford, because he did not find these universities artistic and interesting enough. Therefore, he went to the private Reed College, a college which his parents could not really afford. He was bored by the mandatory courses and went to other courses which he liked instead. When he felt guilty about the seemingly useless spending of his parents' savings, he decided to leave college. Thereafter Steve Jobs kept attending courses without paying, something which was curiously tolerated by Reed. Among other courses he attended a calligraphy course, he particularly liked this course because it provided him with new insights. According to him, this coincidence of circumstances has played a major role in his later entrepreneurial success. *"If I had not attended that particular course, then the Mac would never had so many different fonts and proportional spacing, but only a type machine character. And since Windows copied the Mac, it is likely that no single PC have had it"* (Walter, 2011, p. 64). This anecdote is considered to be a contingency narrative, which is composed of several contingency indicators, like attending the calligraphy course.

Thus according to the entrepreneur mentioned above, contingencies defined in this project as *occurrences with implications for entrepreneurial opportunity formation which is perceived by the actor-in-focus as randomly originated*, have played a significant role in his entrepreneurial success story. Beyond this specific example, the general question arises what role contingency plays in entrepreneurial opportunity formation (Garud et al., 2010; Harmeling, 2011; Harmeling et al., 2009; Harmeling and Sarasvathy, 2013). In other words, the role in *entrepreneurial opportunity identification and development* (Ardichvili et al., 2003). Sustainable entrepreneurship, a specific type of entrepreneurship, is this project's research scope in examining this role. This delineation is made to study contingency as optimal as possible.

For sustainable entrepreneurs, *individuals who conceive new business opportunities with a focus on the preservation of nature, life support, and community in the pursuit of perceived opportunities to bring into existence future products, processes, and services for economic and non-economic gains to individuals, the economy, and society* (Schaper, 2002; Schumpeter, 1939; Shepherd and Patzelt, 2011), it is essential to change existing systems and values to make radical opportunity formation possible (Dean, 2013; Schaper, 2002; Thompson et al., 2014). This societal change takes place at a high level of abstraction, beyond the direct influence of a sustainable entrepreneur. Being dependent on phenomena beyond their control, it is therefore expected that contingency plays a more significant role in sustainable entrepreneurship than for instance classical entrepreneurship or classical business activities. In other words, it is considered that sustainable entrepreneurship is a pressure cooker process in which contingency plays a more than average role when compared to other business processes. Consequently, contingency's influence on opportunity formation can be detected and examined with more ease. Altogether, the aforementioned remarks lead to the following research question:

What is the role of contingency in sustainable entrepreneurial opportunity formation?

The aim of this project is to illustrate the role of contingency as a potential explanatory factor in the process of opportunity formation. The aforementioned Steve Jobs anecdote shows contingency's potentially far-reaching consequences, while little scientific attention is devoted to the topic. The origin of this lack of attention is attributed by Harmeling (2011) to society's desire of studying the

knowable. As a result, contingency as explanatory factor in the process of opportunity formation is currently more or less overlooked in entrepreneurship literature (Harmeling, 2011). This is causing flaws in entrepreneurial education (Honig, 2004) and is even harmful for management scholarship (Harmeling, 2011).

This project, by using the narrative approach, contributes to existing literature by showing that contingency is a relative large explanatory factor in the process of opportunity formation compared to other factors which can be fully controlled. Especially in starting the entrepreneurial process and in the beginning of this entrepreneurial process. Moreover, it is considered that contingency is to a certain degree controllable and can be planned up to a certain point. Therefore, sustainable entrepreneurs can to a certain degree influence the role of contingency in their opportunity formation. From a policy perspective, it might pay off to invest in the entrepreneurial ecosystem instead of investing in a few predefined entrepreneurial 'winners' startups. It seems almost impossible to predict a startup's success beforehand, because many unpredictable factors could play a significant role in the entrepreneurial process and possible success. From a managerial perspective, awareness about the potential far-reaching consequences of contingency should be spread. Decent risk management can influence indirectly the consequences of contingency.

The following theory section develops towards this project's theoretical framework. Thereafter, the methodology is set out. A representative part of the results is shown in the results section, after which these results are discussed in eight analysis themes. In the conclusion and discussion parts, this project's findings and their meaning are addressed. This project concludes with several appendices, displaying the interview script, the remainder of the results and the list of interviewees, which can be consulted when extra context is needed for the reader's understanding in the matter.

2) Theory: historical and personal contingency

This section shows the establishment of contingency's definition and elaborates further on the concept's position in society, in scientific literature and more specific in the entrepreneurial opportunity formation. This cumulates into a theoretical framework which is displayed at the end of this section.

2.1 Contingency

The aforementioned Steve Jobs anecdote shows the potentially far-reaching consequences of contingency. However, at the same time little scientific attention is devoted to the topic. The origin of this contrast, is attributed by Harmeling (2011) to society's desire of studying the knowable or those phenomena which are retro perspective and rely on historical data. This data on widely-diffused practices or very large populations or organizations is relatively easy to obtain, which results in an overrepresentation of the knowable in science. This challenging relation between science and contingency is also been discussed a few decades ago by (Rorty, 1989), so seems to be in a status quo. The current state is causing flaws in entrepreneurial education (Honig, 2004) and is even harmful for management scholarship (Harmeling, 2011).

A wide variety of definitions and purposes¹ of contingency is present. The two concepts that are closest to reach this project's interpretation of contingency are defined in the *Oxford English Dictionary* as "*an event the occurrence of which could not have been, or was not, foreseen and the befalling or occurrence of anything without preordination.*" Harmeling (2011) defines contingency scientifically in a broad manner as "*possibility without necessity*", while notifying the concept is seen as an entrepreneurial resource. A more common used term that also covers the overtones is *randomness*.

Besides, in all these aforementioned definitions, a causal relation is missing. Defining a causal relation is crucial when exploring the explanatory factor of contingency. To break out of the abstractness of the concept contingency and to clarify the required causal relation, an algebraic style description is given. Contingency is considered to be the 'but for this person or that event' in the sentence "*but for this person or that event which led to x, y or z, Company A or Phenomenon B would never have come into being*" (Harmeling, 2011, p. 294). To illustrate this, a link is made with the Steve Jobs contingency narrative. His attendance in the calligraphy class is considered to be the 'but for', which led to new insights in making computers (x), giving the Mac computer an innovative feature (phenomenon B). The questions 'what' and 'to what extent' other factors played a role in reaching this phenomenon B arises directly. This question is in line with this project's research objective. The definition composed by Harmeling (2011) is considered to be too broad to function as working definition in this project. Therefore, contingency is defined as *an occurrence with implications for entrepreneurial opportunity formation which is perceived by the actor-in-focus as randomly originated*. Consequently, contingency can only be identified in retrospect, when the implication has occurred. The concept of contingency is elaborated further in the following paragraph.

¹ The term contingency is used as a cost concept in risk assessment, is used as a table in statistics and is used as an approach in management theory (Agresti, 1992; Chen, 2011; Ginsberg and Venkatraman, 1985; Harmeling et al., 2009; Kieser and Kubicek, 1983; Moselhi, 1997; Querns, 1989; Zeithaml et al., 1988).

Harmeling (2011) describes two types of contingency, respectively historical contingency and personal contingency. On the one hand historical contingency, which can be seen as *the type of contingency that shapes and adjusts the landscape wherein agents are active by events in the broadest sense of the word*. In other words, unexpected events in the context of an agent with unexpected consequences for that agent. On the other hand personal contingency, which can be seen as *the chance brew of the agent's experiences, skills, knowledge, relationships and obsessions*. In other words, the personal package an agent has developed over time. In other words, from an entrepreneur's point of view, it is the outside versus the inside. Therefore, the attendance of Steve Jobs in the calligraphy class can be classified as a type of historical contingency, influencing his landscape. This historical contingency eventually has led to specific knowledge, a personal contingency. In order to complete the picture of the concept it is illustrative to mention that in both types, contingency can have a negative character (Harmeling and Sarasvathy, 2013). For instance, a natural disaster (historical contingency) and a burn out (personal contingency).

This project's concept of contingency has similarities with and therefore can be mistaken for the literary more widespread concept of serendipity. Serendipity is introduced by Horace Walpole in 1754, and is defined in the *Oxford English Dictionary* as *the faculty of making happy and unexpected discoveries by accident* (Foster and Ford, 2003). However, a number of authors have argued for an element of potential control. For instance, according to Rosenman (1988) the discovery of penicillin was dependent on the will of the questioning mind to view data from several perspectives, a factor described by Roberts (1989) as the prepared mind. In science, serendipity is considered to be an essential tool to lead the discovery process in the right direction to what extent possible (Foster and Ford, 2003). To conclude, literature presents this phenomenon as being in some way passive (fortuitous discovery) with nevertheless an active flavour (prepared mind) operating at the edge of consciousness (Foster and Ford, 2003). However, serendipity has a limited scope. The concept's focus is on the technological production process and illustrates the technological breakthroughs in case studies like x-rays, penicillin, Post-its and Viagra (Garud et al., 2010; Graebner, 2004; Roberts, 1989; Rogers, 2003). In other words, serendipity can be considered as a certain type of contingency in a product development context, just covering the discovery side of this entrepreneurial innovation. Therefore, in this project serendipity is not equal to contingency, it is a type of contingency.

At this point, this project's main concept contingency, the key determinant to be analysed, is delineated. The following part elaborates further on the environment in which this contingency takes place, the entrepreneurial process.

2.2 The entrepreneurial process: three phases

It is important to note that the developments of artifacts, human made objects including firms and products, is an evolutionary process (Harmeling, 2011; Sarasvathy, 2001). With this project's playing field in mind, which is the entrepreneurial process, both the development of firms and products is relevant. Considering the evolutionary process, it is important to notice the dimension time. The entrepreneurial process over time can be categorized in phases, each with its own characteristics. This project examines the role of contingency during these different phases.

According to Leung (2003), entrepreneurial firms face different challenges during their development. The requirements change substantially as these entrepreneurial firms transit from start-up to growth phase. Before these two different development stages of an established firm, there is a lot activity

going on before the entrepreneurial activity is officially started. Greve and Salaff (2003) argues for three regular phases in the establishment of entrepreneurial activity: 1) the motivation phase, 2) the planning and 3) the establishment phase. In the motivation phase entrepreneurs discuss the initial idea and develop their business concept. The planning phase covers the preparation to set up a firm, with getting the necessary knowledge and resources as prime goal. Lastly, in the establishment phase the focus is on daily activities and problem solving. In other words, Greve and Salaff (2003) mainly describe the pre-startup phase. Van Gelderen et al. (2005) elaborates more on this specific phase and classifies it into four sub-phases. The first phase is linked to the development of an intention to start an entrepreneurial activity. Thereafter, an opportunity is recognized and a business plan is developed in the second phase. In the third phase resources are assembled and the organization is created. The exchange start off with the market is the characteristic of the final phase.

In this paper the Leung (2003) classification, with the addition of the pre-startup phase, is used to catch the dimension time in the entrepreneurial process, respectively as 1) the pre-startup phase, 2) the startup phase and 3) the growth phase. In this project the firm's official signing in the Chamber of Commerce's register marks the transition from phase 1 to phase 2. In the startup phase the main focus is survival, whereas the growth phase merges when firms develop a clear strategic direction for future growth and carry out the professionalization process. Therefore, in this project the official signing of a firm's first employee beyond the firm's initial team, marks the transition from phase 2 to phase 3. How this project takes this classification into account is further addressed in the methodology section.

2.3 Entrepreneurial opportunity formation

Entrepreneurial opportunity formation is a concept that covers *entrepreneurial opportunity identification and development* (Ardichvili et al., 2003). An ongoing scientific debate is held on the topic of entrepreneurial opportunity formation and its origin (Alvarez et al., 2010; Garud and Giuliani, 2013). Entrepreneurs are *individuals who conceive new business opportunities and who take on the risks required to convert those ideas into reality* (Schaper, 2002; Schumpeter, 1939). On the one side it is assumed that these opportunities are a result of discovery, while on the other side entrepreneurial creation is considered to be the main source of renewal. Despite their differences both ontologies can be seen within the spectrum of a multilevel perspective (Garud et al., 2014). In other words, both take the entrepreneurial agent and the surrounding context into account.

The 'discovery ontology', supported by Shane and Venkataraman (2000), is suggesting that (entrepreneurial) opportunities are pre-existing features of context, awaiting for their discovery by alert entrepreneurs (Kirzner, 2009) or by actors involved in intermediate trade (Hargadon and Sutton, 1997; Obstfeld, 2005). In contrast, the 'creation ontology' is supported by Alvarez and Barney (2007), suggesting that entrepreneurs create new opportunities. In this line of reasoning, certain context has a decisive role in the outcome of these opportunities. Other research in this ontology has emphasized the importance of similar processes (Baker and Nelson, 2005; Sarasvathy, 2001). Both ontologies support the context's importance in the emergence of entrepreneurial innovation as key moderator of success or failure, whether opportunities are found or made (Garud et al., 2014).

Several theories² have tried to escape from this discovery-creation dissidence. This project passes by this debate. Both ontologies support the context's importance in the emergence of entrepreneurial innovation. Something which is crucial for this project's objective, examining the role of contingency in opportunity formation, because one of the two main concepts, historical contingency can be considered as the entrepreneur's context.

2.4 Contingency and entrepreneurial opportunity formation

"Great entrepreneurial firms are products of contingencies. Their structure, culture, core competence, and endurance are all residuals of particular human beings striving to forge and fulfil particular aspirations through interactions with the space, time and technologies they live in" (Sarasvathy, 2001, p.6).

What is the role of contingency in the process of entrepreneurial opportunity? According to Harmeling (2011), contingency is considered to be an important factor in both the process of the initiation of a venture with the goal to exploit an entrepreneurial opportunity into an artifact, and the process of the accumulation of required resources to bring an entrepreneurial artifact to life. This is an evolutionary process where stakeholders, resources and contingencies continuously appear and disappear. Consequently, the nature of contingency entails that industry and market formation can differ significantly in different places or different times. In other words, contingency is intertwined in the entrepreneurial process.

In the following paragraph it is addressed how the two types of contingency separately could shape opportunity formation as argued by Harmeling (2011). The first way, historical contingency. As entrepreneurs move to create and exploit future markets, these new markets become saturated in the end which results in a status quo, the entrepreneur in the making consciously or unconsciously reconstructs the emerged artifacts (including firms and products) of these now established markets to find the next entrepreneurial opportunity. An opportunity that perhaps could not exist but has emerged in the context. In this light, the creation of a good, service, market or movement is thus built upon a historical contingency, it wasn't possible at an earlier moment of time. The second way, personal contingency. The unique circumstances that have shaped an individual, places this individual in a particular perspective, this could happen without the awareness of holding this position. When translated into an entrepreneurial view, the unique mix of experience, talent and networks are the reason an individual is able to create a new market. Here the entrepreneur is acting on personal contingency. As earlier mentioned, the above described mechanisms are described as separate originators, regarding opportunity formation. However, it is considered that an interaction between the two concepts is most common. It is considered that contingency becomes a resource in the hands of decision makers, in this project's context considered to be entrepreneurs. This view is used as foundation by Harmeling (2011), portraying the entrepreneurial process as a mechanism through which personal contingency (private obsessions) fulfils historical contingency (public need). Therefore, understanding both the historical and the personal aspects of contingency is critical to understand the entrepreneurial process. This project therefore explores the role of both aspects in entrepreneurial opportunity formation at the entrepreneurial agent's level of analysis.

²Several theories like structuration theory, disequilibrium theory and the narrative perspective (Chiasson and Saunders, 2005; Chiles et al., 2010; Gartner, 2007; Garud et al., 2014; Garud and Giuliani, 2013; Hargadon and Douglas, 2001; Martens et al., 2007; Sarason et al., 2006).

2.5 Theoretical framework

The above-described delineation of the two concepts historical contingency and personal contingency regarding opportunity formation in the entrepreneurial process results in a theoretical framework as can be seen in figure 1. Historical and personal contingency together make entrepreneurial opportunity possible.

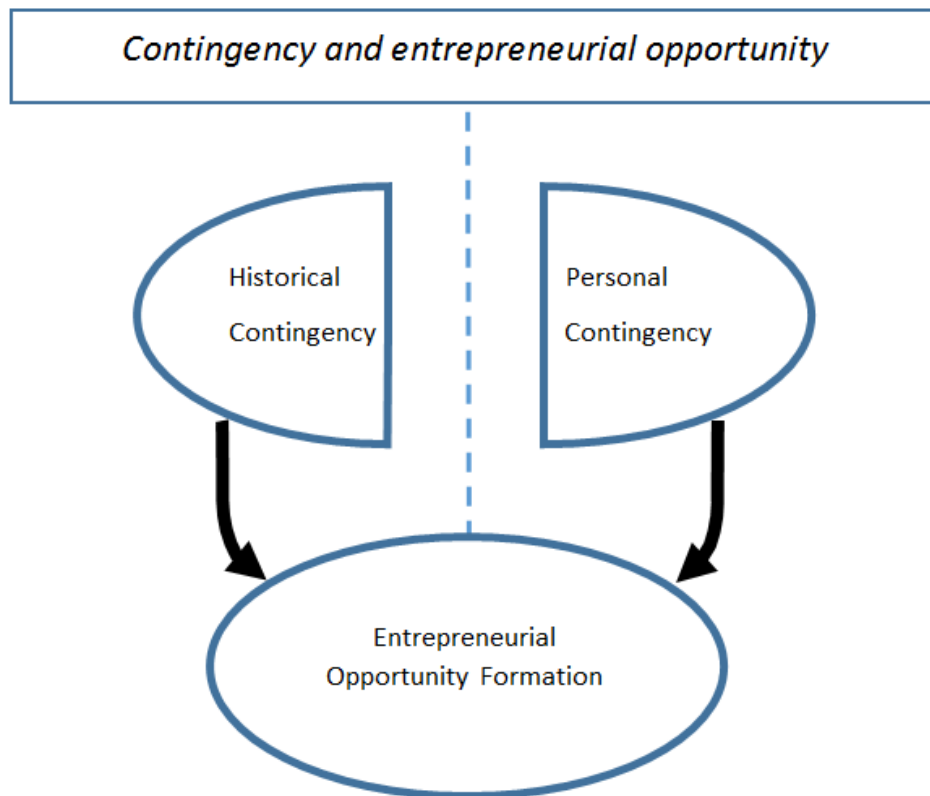


Figure 1. Theoretical framework.

3) Methodology: narrative approach

This section describes this project's research methodology with the aforementioned research question - *what is the role of contingency in sustainable entrepreneurial opportunity formation?* - in mind. This part starts with the research design in which the research strategy is explained. Thereafter approaches to data collection and data analysis are described. In this project the data collection and analysis were interrelated processes. In other words, the researcher followed an iterative process of constant comparison between data collection, data analysis, data comparison and theoretical conclusions.

3.1 Research design

To be able to examine the role of contingency in sustainable entrepreneurial processes, an inductive case study is conducted with the individual sustainable entrepreneur (agent) as unit of analysis. This design permits the comparison between the agents' various experiences with possible contingency in their entrepreneurial activity. In other words, the agents' interpretation of contingency is examined. In order to do so an interpretivist epistemology, where a certain agent's interpretation of a certain phenomenon in a certain social world is examined (Bryman, 2008), is chosen. In general, a qualitative approach can be used to understand people's interpretation of subjects (Bryman, 2008). Therefore, as the aim of this project is to understand the agents' perception and meanings regarding contingency, a qualitative approach is chosen. More precisely, a narrative analysis approach is used in as this allows: *"to the elicitation and analysis of data that is sensitive to the sense of temporal sequence that people, as tellers of stories about their lives or events around them, detect in their lives and surrounding episodes and inject into their accounts"* (Bryman, 2008, p.556). This narrative analysis approach is therefore in sync with the chosen interpretivist epistemology.

The theoretical framework is built upon concepts which are determined in the theory section, without the existence of indicators. Consequently, the interpretation of the theoretical concepts in this project can only be based on the data gathered, derived from the agent's replies. Therefore the empirical data collection is of an explorative nature. The absence of these measurable indicators gave rise to the first goal of this project, namely the identification of indicators related to contingency. These so called contingency indicators are considered to be parts of the entrepreneur's contingency narratives, influencing the entrepreneurial process. By using the narrative approach, this project is able to disclose several contingency indicators from the agent's replies, as is shown later in the results section. Beyond the initial goal of revealing contingency indicators, analyzing the gathered data resulted in the notification of possible patterns and regularities. These are addressed in the analysis and discussion section.

Furthermore, this project makes a distinction between different entrepreneurial phases and focusses on sustainable entrepreneurship. This first distinction is already addressed in the theory section. The choice for sustainable scope is explained in the next paragraph.

Sustainable entrepreneurs play an important role in the transition towards a sustainable society (Walley and Taylor, 2002), and could be able to rise above the usual tension between the business community and the environment by their combination of entrepreneurial ambition and green motivations (Beveridge and Guy, 2005). In media and academic debates about the interfaces of environment and entrepreneurship different labels are used for the same concept, like eco-preneur, green entrepreneur and environmental entrepreneur (Beveridge and Guy, 2005).

In this project, the term sustainable entrepreneur is used and is considered to be an entrepreneur *“who is focused on the preservation of nature, life support, and community in the pursuit of perceived opportunities to bring into existence future products, processes, and services for gain, where gain is broadly construed to include economic and non-economic gains to individuals, the economy, and society”* (Shepherd and Patzelt, 2011, p.142). Sustainable entrepreneurs, who aim to open new markets for sustainable technologies, face more difficulties than the classic archetypal entrepreneur, who just start her/his own small business on existing technologies (Parrish, 2010; Schaper, 2002). This implies a radical innovation nature. To diffuse these radical sustainable innovations and utilize entrepreneurial opportunity, business environments, market regulations, and societal norms and values have to change (Thompson et al., 2014). In other words, economic systems and institutions have to change (Dean, 2013). This is a broad societal process that takes place at a high level of abstraction. Although a sustainable agent can contribute to a certain degree to this process by changing the rules of the game (Pacheco et al., 2010), the sustainable entrepreneur is still dependent on the earlier described bigger context. By this dependence beyond the direct influence of a sustainable entrepreneur, it is likely that contingency plays a more significant role in sustainable entrepreneurship compared to classical entrepreneurship. Therefore, having this focus contributes to examining contingency in entrepreneurial opportunity formation in the most optimal way.

3.2 Data collection

The data is collected by conducting semi-structured interviews, a form that suits the explorative nature of this research. In semi-structured interviews the interviewer follows a script to a certain extent, in which any case all topics are covered from interviewee to interviewee. This project's script (operationalization) can be seen in Appendix A. Due to this setting, the interviewer was able to ask follow-up questions as a reaction to interviewees' promising replies (Bryman, 2008). Besides, (additional) in-depth information is gained from the interviewee through non-prepared questions. Altogether semi-structured interviewing therefore provided space to ask adapted questions (Bryman, 2008), which is useful because contextual understanding in a unique situation is important in this research. For instance an agent's experience concerning a specific, personal event, which cannot be expected beforehand. The innovative use of a to-be-filled-in graph was core in the conducted interviews. The interviewees were asked to display their highs and lows regarding success in their entrepreneurial process. In line with the interpretivist epistemology, the interviewees had their own perspective in success. The completed graphs served as a thread for the interviews and the role of contingency related to their highs and lows is discussed. The completed graphs can be seen in the results section and appendix C.

Often qualitative research – this project is no exception – uses purposive sampling to select their units of observation (Bryman, 2008). Purposive sampling is a form of non-probability sampling, where the sample cases are picked in a strategic way to be as relevant as possible. First of all, this project's sample is limited to sustainable entrepreneurs active in the Netherlands, ensuring feasibility in an economic and time related perspective. Second, this project's sample is compiled by convenience and quota sampling. Collaborations with incubators like UtrechtInc, Erasmus Center of Entrepreneurship and Yes!Delft are arranged, allowing access to the organization's current network of affiliated sustainable entrepreneurs and alumni network. These collaborations varied in nature in terms of involvement, some incubators helped actively to persuade entrepreneurs to join the research sample, others were more passive. Additionally, the researcher identified sustainable entrepreneurs in his own network that were willing to join this research project as well. By purposive

sampling it is ensured that both entrepreneurial phases, the startup phase and growth phase, are represented by a significant number of entrepreneurs, respectively 8 and 8. Both groups were able to make statements about their preceding entrepreneurial phase, i.e. the pre-startup phase. It is ensured that the sample consists of a variety among the entrepreneurs in terms of industry and business models. Together with the spread of the incubators all over the Netherlands, the sample can be seen as sufficiently diverse.

Next to these sixteen sustainable entrepreneurs, three facilitating agents were included in the sample as well. These agents' activities are aimed at stimulating entrepreneurship in their area of responsibility. Therefore these agents were able to reflect on the topic of contingency in sustainable entrepreneurship in a more overarching way, an overview perspective on the field of entrepreneurship as whole, instead of the entrepreneurs' more narrow view on their own entrepreneurial process. This resulted in three 'helicopter interviews'. The entrepreneurial interview script is used as guideline, and is slightly adjusted where necessary to be in line with the helicopter view. This addition of three facilitating agents has strengthened the sample, allowing the researcher to examine the entrepreneurial process from a managerial perspective and crosscheck the outcomes. An overview of this project's sample and several characteristics of the involved anonymized agents can be seen in appendix B.

3.3 Data analysis

All interviews were recorded and transcribed to capture all value of the interviewees' responses and to be able to analyze the data afterwards without losing a data spill. QSR-NVivo 10 qualitative data analysis software is used as supportive tool in the coding process, which is described underneath. All transcripts and codes were assembled in one NVivo file and this file is available on request to ensure this project's transparency and to increase this project's external reliability, which is limited due to the qualitative nature of this project (Bryman, 2008). There are two main phases of coding: initial coding and selective coding (Charmaz, 2000). The first phase is an open-minded process and will result in coding every relevant line of text with the first initial impression of the data (Charmaz, 2000; Bryman, 2008). In this way, representative quotes (RQ) are formulated (Gioia et al., 2012). First order codes (FO) are derived out of these representative quotes collected from the interviewees. These first order codes, informant centric codes, do not contain any interpretations by the researchers and are therefore a literal restated reflection of the quotes. Furthermore, when the quote's context is not immediately apparent, this context is attached to the representative quotes between brackets. In the next phase, selective coding, the most common and revealing codes will be highlighted. New codes may be generated by combining the FO codes (Charmaz, 2000; Bryman, 2008). These second order codes (SO), researcher centric codes, contain interpretations made by the researcher (Gioia et al., 2012). At this point, SO codes are derived from the initial identified RQs. To ensure that this coding process as whole is conducted in a structured way, certain concepts introduced in the theory section are used as sensitizing concepts to guide this process. Sensitizing concepts were introduced by Blumer (1954) and they lack clear definition in terms of attributes or fixed benchmarks. In this research's context, sensitizing concepts *"give a general sense of reference and guidance in approaching empirical instances"* (Blumer, 1954, p.7).

As derived from literature and discussed in the theoretical section, two overarching contingency concepts, respectively historical contingency and personal contingency, were identified.

In this line of reasoning, sensitizing concepts were used in this project as guidance in such a way that they gave a general sense of what to look for (Bryman, 2008). In other words, sensitizing concepts were drawn to be able to categorize the identified contingency indicators as being a historical contingency or personal contingency. Consequently, the identified sensitizing concepts were used as categories, indicator categories. Therefore, these sensitizing concepts have ensured that there also could be determined what type of historical or personal contingency a contingency indicator is considered to be. These sensitizing concepts were drawn with the two main concepts' definition in mind (Harmeling, 2011).

Regarding historical contingency, 'events' is part of the definition and is suitable for being a sensitizing concept. The 'events' category consists of contingency indicators that are *things that occur or have occurred in a relatively short period of time in the landscape of the entrepreneur*. Despite the fact that this is a broad catch-all sensitizing concept, not all historical contingency indicators seemed suitable for this category. Therefore this project added 'trends' as sensitizing concept to complete historical contingency. The 'trends' category consists of contingency indicators that are *circuits of a stream that occur or have occurred in a relatively long period of time in the landscape of the entrepreneur*. In other words, the 'events' and 'trend' categories together influence the context of the entrepreneur. Regarding personal contingency, 'experiences', 'skills', 'knowledge', 'relationships' and 'obsessions' are suitable for being sensitizing concepts being the clear building blocks of the definition. These categories consist of contingency indicators that are related to the aforementioned concepts and form the inside of an entrepreneur. An overview of this project's data analysis process, from RQs towards sensitizing concept, can be seen in figure 2.

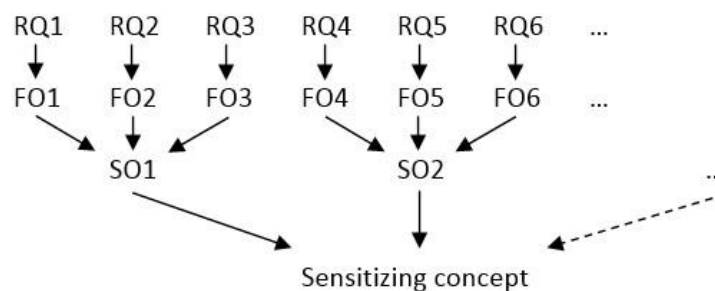


Figure 2. Coding tree (RQ= Representative quote, FO= First Order code, SO= Second Order code).

Furthermore, with the narrative analysis approach and the interpretivist epistemology in mind, it is crucial for this project to capture the agents' interpretation of the concept contingency as explanatory factor in opportunity formation. For example, the question to what extent the identified contingency indicators have played a role in their entrepreneurial processes compared to other factors. To conclude, the researcher has discussed the results with his supervisor to promote the internal validity, improving the likelihood that the causalities from the data identified by the researcher (observations) are a true reflection of the theory used (Bryman, 2008).

4) Results: contingency indicators & interpretation interviewees

In this section a comprehensive description is given of the data collected. In total 19 interviews are conducted, of which 16 from entrepreneurial interviewees (Ein#1-Ein#16) and 3 facilitating interviewees (Fin#1-Fin#3). As mentioned before, an overview of these anonymized interviewees and several characteristics can be found in appendix B. In consideration of readability, it is chosen to display only a part of the relevant data collected. Three entrepreneurial narratives and one facilitating interview are displayed. The remainder of the results are included in the analysis and can be found in appendix C. The three narratives are chosen based on the three entrepreneurs different interpretations of contingency. Ein#7 considers that contingency have had a low influence on opportunity formation, Ein#8 considers this to be medium and Ein#12 considers this to be high. Therefore, displaying these three narratives results in a reflection of the interviewee sample. The following analysis section elaborates further on these differences in interpretation. It is chosen to display one facilitating interview to keep a true reflection of the sample ratio. Because the three facilitating interviews are comparable in terms of interpretation and insights, it is chosen to display the first one that is conducted.

First the contextual background of the interviewee is given, including a completed graph that shows the pattern of the entrepreneurial process. Thereafter, the two overarching theoretical concepts historical contingency and personal contingency are addressed on the basis of the sensitizing concepts as introduced in the methodology section. Last, the interviewee's interpretation of contingency is described. The earlier introduced indicator categories ('events', 'trends', 'experiences', 'skills', 'knowledge', 'relationships' and 'obsessions') are used to classify the identified contingency indicators. Sometimes identified contingency indicators belong together but are described in separate contingency indicators due to their characteristics. In other words, sometimes there is an overlapping. For example, within a narrative a certain event (historical contingency) could have led to a certain experience (personal contingency). In that case, there will be a reference to the exact indicator category the other contingency indicator is categorized in.

4.1 Narrative Ein#7

Contextual background interviewee

Ein#7 is co-founder of a startup that is active in the printing sector. The interviewee is a sustainable entrepreneur since 2013, the same year the startup was founded. The startup's core business is to produce printers that print on any paper without using ink. The startup has not yet signed a first employee beyond the firm's initial team. Therefore the current entrepreneurial phase can be categorized as startup phase. Examples of the entrepreneur's achievements are having a working prototype and bringing in investments. In the figure hereunder, the pattern of Ein#7's entrepreneurial process regarding success over time is displayed. This pattern can be used as guidance during the following entrepreneurial narrative.

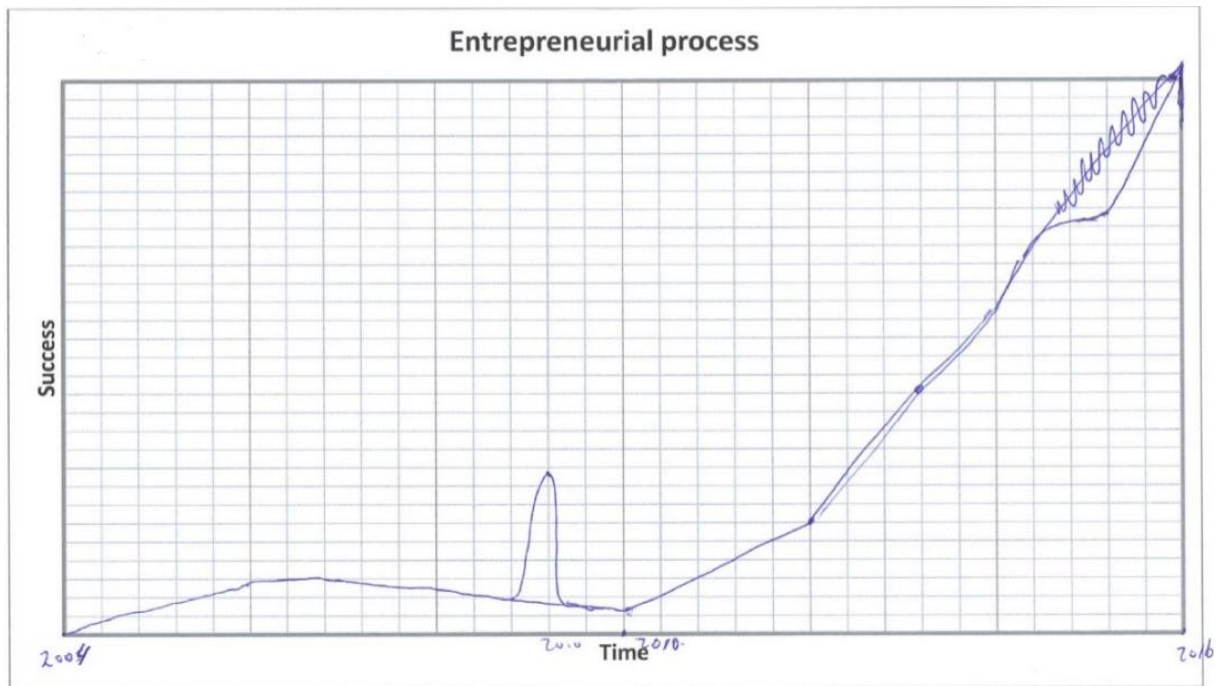


Figure 3. Graph entrepreneurial process Ein#7.

Historical contingency indicators

The attendance of the business economics class during high school in 2004 can be seen as an influential 'events' indicator that took place in Ein#7's pre-startup phase. *"Before that time I had no idea (what entrepreneurship was). Then for the first time you come in touch with entrepreneurship, think about it, consider it."* Traveling alone is an event that influenced Ein#7's pre-startup phase as well. The first steps towards entrepreneurship were his activities for a student discount card in Rotterdam and in Belgium. Especially Ein#7's activities in Belgium were quite similar to entrepreneurial activities.

The foundation for Ein#7's current startup was formed during a study course at the affiliated incubator of his university. *"You could only join the course if you had a startup team. I had an individual idea and my business partner to be had an individual idea as well. At the kick-off drinks you could pitch your idea and thereafter you would form teams. My business partner to be was there as well with a nice idea without a startup team."* The mandatory entrepreneurial team with Ein#7's partner's idea as core was formed and after the study course the new startup took part in the incubator's launch lab program to develop further. Some of these addressed 'events' indicators have related 'experiences' indicators that are discussed in the next part.

Personal contingency indicators

An 'experiences' indicator in Ein#7's pre-startup phase is related to the attendance of the business economics class during high school. *"In that class there were some classmates who wanted to run a business. They all thought that it was all about having a specific skill. Then I already realized that someone just must grab the project by its balls and just do it. They totally did not realize that. They asked what is your added value in the team. Well, I make it happen, but they did not believe in this vision. This further developed my urge to prove myself as entrepreneur."* Another 'experiences' indicator is attached to the aforementioned traveling. *"I had thoughts like I do not exactly know what I want and I have to determine that myself. I have figured that out during that trip, and I said to*

myself if there is coming an entrepreneurial opportunity then I am going to grab this.” This entrepreneurial opportunity was the possibility to work for the aforementioned student discount card, which also resulted in attached ‘experiences’ indicators. “In Rotterdam I first experienced whether I liked sales and running an own business. Then we spread to Belgium, which was really like running an own business. I had to start from scratch. Building a company that existed in the Netherlands in a country where I knew no one. That was an entrepreneurial challenge within an existing company. That was a glorious time. Afterwards I knew that I wanted to become an entrepreneur.”

Another ‘experiences’ indicator is Ein#7’s educational career. Ein#7 first thought that the choice of study was not ideal. *“If you sit in the college-room and look around you and think this is not for me, but I do not know what otherwise. And you know that other studies like economics and engineering are not fun either, then you automatically look further and think okay what is it that I do not like of this image of the future.”* Entrepreneurship proved to be the solution, *“since you have more individual freedom.”*

Another personal contingency indicator that has pushed Ein#7 to his entrepreneurial activities is found in the ‘relationships’ division. After traveling Ein#7 met somebody who Ein#7 knew from a previous job. They decided to have dinner together and the student discount card opportunity was proposed to Ein#7. Ein#7 has other remarks about his network as well. *“You can learn valuable lessons here (at the incubator). During drinks you can ask for things, I do think that must happen often, that is something I value a lot. The people you meet in your network are quite decisive for your success.”*

Interpretation interviewee

“In sum, there were quite a lot of factors that I myself controlled. There will always be a coincidence factor, however I think that the manipulability factor is relatively high. The difference between one person and the other person is that one person is able to decrease the coincidence factor more than the other person. So one person is able to perform these operations so that the coincidence factor is minimized and the factor on which that person has influence is being maximized. You can play with it.”

In other words, Ein#7 interpretation of the role of contingency in his entrepreneurial process is that contingency’s influence is relatively low. This is reflected in Ein#7’s ranking of the contingency factor on a scale between 0-10. *“Contingency can be a very important factor. I have no control about that extreme events like the Fukushima disaster. That type of event can wipe out all other factors and can destroy the whole process. However, I think that this area is little. I believe in manipulability. If we see it apart from the extreme events, I rank the role of contingency as a 1 out of 10.”*

4.2 Narrative Ein#8

Contextual background interviewee

Ein#8 is founder of a startup that is active in the solar panel sector. The interviewee is a sustainable entrepreneur since 2009, the same year the startup was founded. The startup’s core business is to produce assembling systems that enables the use of solar panels on flat roofs. The startup has signed a first employee beyond the firm’s initial team. Therefore the current entrepreneurial phase can be categorized as growth phase. Examples of the entrepreneur’s achievements are having a product

that is officially tested in a wind tunnel and having numerous customers. In the figure hereunder, the pattern of Ein#8's entrepreneurial process regarding success over time is displayed. This pattern can be used as guidance during the following entrepreneurial narrative.

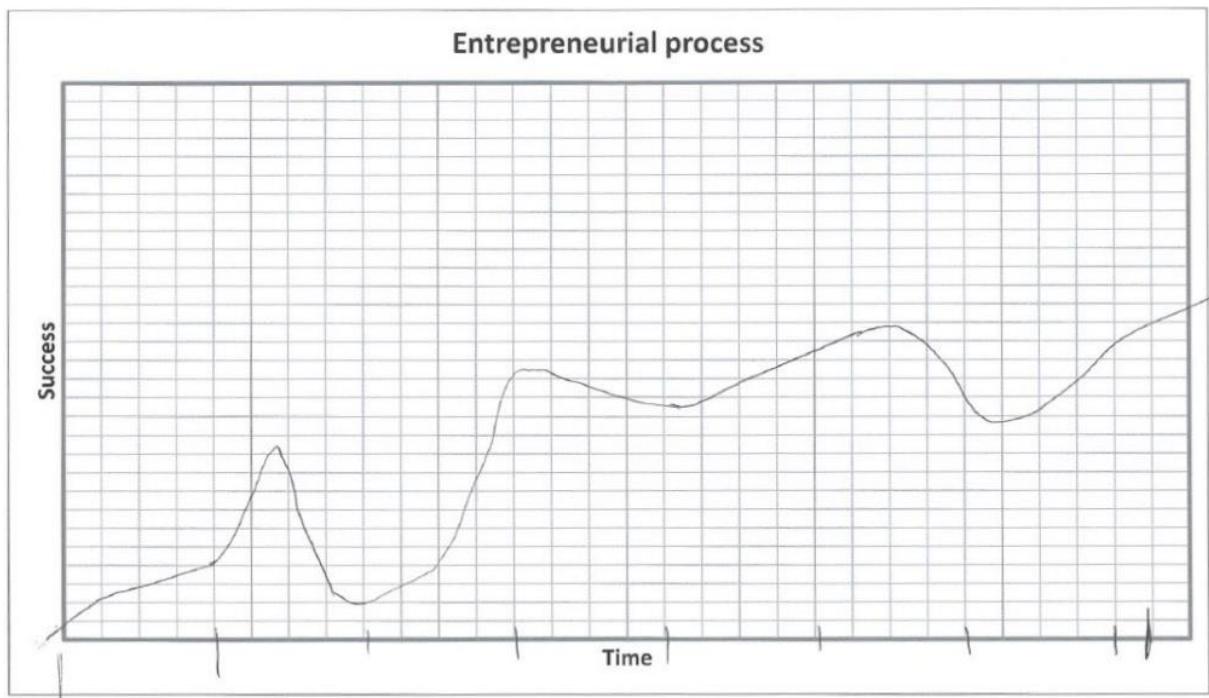


Figure 4. Graph entrepreneurial process Ein#8.

Historical contingency indicators

A quite practical and concrete 'events' indicator in Ein#8's pre-startup phase in his entrepreneurial process is the bankruptcy of his employer in 2009. *"Me and my business partner both worked at this big company in Utrecht. I arrived as employee number 80 and by the end, 10 years later 1400 people were with the organization. The company was very ambitious in renewable energy. Along with the ambition the recklessness grew. In 2008 the credit crunch was there and the banks were increasingly reluctant to provide capital, while this was increasingly needed by the company. Too much risk was taken, the company had bitten more than they could chew and things fell apart. It is a contingency that the company went bankrupt, it was not my ambition to start for ourselves."*

After the bankruptcy Ein#8 was looking for a new job at an employer. However, applying for a job in that period of economic crisis was rough. *"So I was housebound for a while. To keep myself a little bit busy and we were still a bit of in business vibes, we checked our opportunities."* In that period Ein#8 and his business partner developed and tested a prototype of the idea that is still core of their startup nowadays, financed by their savings. However, starting and running a business with this prototype was not in Ein#8's mind yet. It was attempted to license it to a relevant market participant. *"We found a company that was potentially willing to pay for a license. They were seriously interested in taking over the rights to the prototype."*

During the negotiations with the company Ein#8 was paid to develop the prototype further at the facilities of the company. In addition, the intellectual property research done by the company had a positive outcome as well, the prototype seemed to be unique and new. Then a few things happened

simultaneously. *"It turned out that their organization was not suited for our prototype. The marketeers were doing other things, it was syrupy, a not-invented-here attitude. In addition, they were undermining our idea. Parallel to us they were working around our patent and license, trying to figure out another system with the same purpose. Of course, we were very angry."* Consequently, the negotiations collapsed and this 'events' indicator was the kick-start for Ein#8's entrepreneurial process. *"If that company had acted somewhat smarter, if they slightly earlier had told us that it was a done deal, we already had decided in favour of the deal, then it had been theirs. So because they hesitated to sign, we could pull the plug and start a business for ourselves with our prototype at an incubator."*

All these 'events' indicators took place in Ein#8's pre-startup phase, starting with the global credit crunch and ending with the negotiation deception. Other 'events' indicators that Ein#8 indicates that have or could influence his entrepreneurial activities are policies on subsidies, the Paris climate agreement established in 2015, governmental objectives, *"these are huge drivers."* A more specific indicator is related to Ein#8's largest customer, *"our largest customer came along when we had a stand at a fair."*

The first 'trends' indicator that Ein#8 indicates is related to the aforementioned policies on subsidy. When the startup was made operational, the Belgium market was very favourable for the startups focus. This ended and because the Dutch market was evolving, due to the lowering prices in the industry, the startup was able to survive. The lowering of prices and other developments that take place at a societal level, is considered as a 'trends' indicator as well.

Personal contingency indicators

An 'experiences' indicator in Ein#8's pre-startup phase is related to his work activities as industrial developer at his aforementioned employer. *"Sometimes we thought, darned, sometimes we make things that are successful and we are making no extra money. Or you developed something and then someone else within the company had to make it a success, but that did not happen. That rankled a bit occasionally."* In his startup Ein#8 is in control of all these processes that lead to success, which is a motivation in his entrepreneurial process. A process Ein#8 still doubts about whether it is his destiny. *"I still do not know if we are thoroughbred entrepreneurs, we do our best with trial and error, it is pretty good. But I do not see entrepreneurship as a calling or goal."*

"As it turns out, if you run your own business, you are doing a lot yourselves, websites, texts, brochures, product development, e-mails, logistics, you need to be a jack-of-all-trades. As industrial developer this is already your nature to some degree." Another 'skills' indicator that has influenced Ein#8's entrepreneurial process positively is Ein#8's graphic skill-set. *"I am computer savvy, making websites, graphic and movies. That is indeed a skill of mine and it turned out to be enormously useful being an entrepreneur. Taking beautiful pictures of the product."*

A 'relationships' indicator was responsible for the needed capital necessary for the developing process of the prototype at the time that the startup just was seeded in the incubator. *"We need money to make it through the coming weeks we thought. At a party my business partner ran into someone with a certain fortune who was willing to help us out. What do you need? 50.000? That is fine. I you can repay the fund it is nice and otherwise it is okay either. That was great because we desperately needed the money for research activities."*

Also the aforementioned bankruptcy 'events' indicator caused a 'relationships' indicator as well. *"From our previous work environment we have created and kept a pretty big network in the renewable energy sector. Many of those people are still working in this sector. In the, at that time, booming Belgium market, a company was willing to work with us because they knew us from our former activities. So we actually had a launching customer, while we did not even have a decent prototype. In general, it appears that we know a lot of people, a lot of colleagues. They are currently developing solar parks, project developers or potential customers. That is great, a really good network."*

Interpretation interviewee

To conclude, Ein#8's interpretation of contingency. The following quotations are a reflection of Ein#8's interpretation. *"The bankruptcy was in retrospect a blessing in the skies. It was a contingency, we could not do anything about it and we did not like it. But if that not had happened we would still be settled there. Or we were still employed and we would not have had this startup."* Ein#8 indicates that is too difficult to rank the role of contingency in his entrepreneurial process related to opportunity formation in a scale from 0-10.

"The emergence of a home market, that is just luck. By the same token, it was not the case and it would have collapsed (the startup). As a small playing figure in the market you cannot do anything about it. I think contingency plays a pretty important role and I think that you cannot plan it all. However, in the end I think we have done a lot on our own, just the quality of our product and our vision. But decisive things were indeed just coincidence."

In sum, Ein#8 sees contingency as something that is happening to actors without predictability. However, sometimes contingency could be influenced, can be something that can be controlled in a way.

4.3 Narrative Ein#12

Contextual background interviewee

Ein#12 is founder of a startup that is active in the solar panel sector. The interviewee is a sustainable entrepreneur since 2011, the same year the startup was founded. The startup's core business is to decrease barriers for people who want to use sustainable energy by leasing out solar panels. The startup has signed a first employee beyond the firm's initial team. Therefore the current entrepreneurial phase can be categorized as growth phase. Examples of the entrepreneur's achievements are bringing in investments worth of millions of EUR and having numerous customers. In the figure hereunder, the pattern of Ein#12's entrepreneurial process regarding success over time is displayed. This pattern can be used as guidance during the following entrepreneurial narrative.

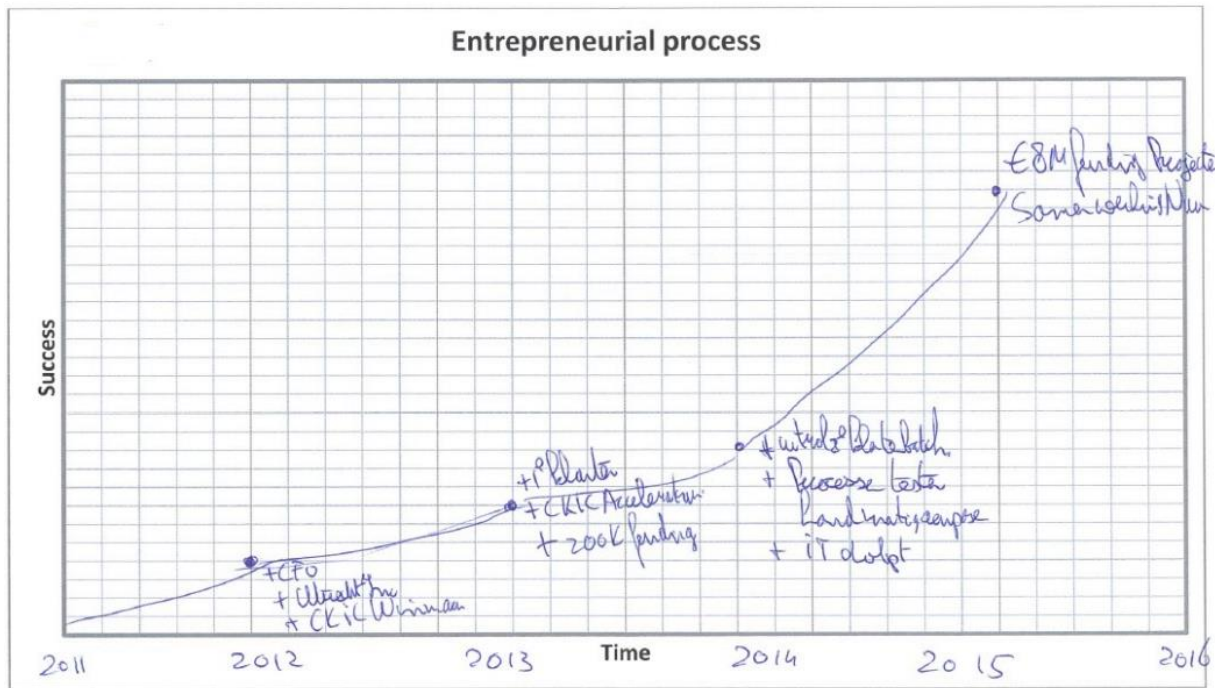


Figure 5. Graph entrepreneurial process Ein#12.

Historical contingency indicators

In Ein#12's pre-startup phase, Ein#12 was posted abroad to New Delhi, India in the role of commercial director of an automobile lease corporate, with the goal to make the company profitable after years of losses. This 'events' indicator has attached and caused several personal contingency indicators, which are described further on in the next part about personal contingency indicators. Therefore, this event has had a significant impact on Ein#12's entrepreneurial process. Besides this event that appeared in the pre-startup phase, Ein#12 indicates several 'events' indicators that happened during his entrepreneurial process that influenced this process positively. One of these is seeding in the UtrechtInc incubator. Other influential events were winning the 2012 Climate-KIC venture competition, getting the first launching customer and bringing in the first funding. The latter two 'events' indicators are discussed in more detail regarding the role of contingency and the influence in opportunity formation.

In 2013 Utrecht University was working on something new, namely the sustainability week. *"It is a fact that we have been lucky that Utrecht University was in the process of organizing such a week. They were looking for some suitable, practical activities to address the theme. It was the right moment, the right timing to ask them can you bring our product to the attention of your employees. And this happened. At that time, our biggest issue was not our product but the fact that no one knew about the possibility to lease solar panels, so it was very helpful."* Besides the resulting cash flow, the cooperation was also of value in a different way. *"Obviously it was great for us to be in the news with Utrecht University as a major customer. A great, reliable party, they exist 380 years. It is fantastic to roll out our innovative concept with such a partner."*

Bringing in the first funding also was all about timing and was exactly at the same time as getting the first launching customer. Energiefonds Utrecht, a fund based in Utrecht with the ambition to fund sustainable entrepreneurs and institutes, were about to launch themselves. *"They wanted to have*

three initiatives in their portfolio during their launch. We were in the running to be one of these initiatives. That was our first funding. Consequently, bringing in the following funding is easier due to the fact that someone already have invested in you and you are already on the market."

Ein#12 indicates a current entrepreneurial vibe as a 'trends' indicator that has influenced entrepreneurial processes in the Netherlands in a positive way, including his. *"There are many people with good ideas, but they need to be triggered to actually go for it. This vibe creates a self-fulfilling prophecy. When there is a lot of attention for sustainable entrepreneurship, when there is openness and budget for it, then it is just going to work, then you become an entrepreneur, then you get successful startups because you are in a fruitful environment. If you are a seed in the middle of a desert, you could never germinate. You cannot control this influence (as an entrepreneur)."*

Personal contingency indicators

As already mentioned, Ein#12's post abroad to India has several attached personal contingency indicators. The first can be categorized as an 'experiences' indicator and is related to Ein#12's sustainable entrepreneurial drive. *"I lived in New Delhi, the most polluted city in the world. A lot of poverty. I became a father for the first time over there, we got a son. So I started thinking how would I leave it (the earth) behind, and would I leave it behind better or worse than what I got myself. That is a personal motivation to become a sustainable entrepreneur. What role I am going to choose to achieve an improvement, that was not in politics or being active in a NGO, but being commercial and entrepreneurial."*

The second 'experiences' indicator has lowered Ein#12's personal barrier to become a sustainable entrepreneur and is also related to his stay in India. Ein#12 has experienced what it is like to be a relative millionaire when compared to the general poverty, having a beautiful expat apartment, having a car with driver, having a cook, having a nanny. *"Every day I was driven around by my driver with my new born son next to me and then you see a family of six children in the verge, next to the road. My son has been so lucky that he was born here and not born there. And every day you drive past the family and one day there are not six children but five. And viewed in this picture, was it a big risk for me to become an entrepreneur? Absolutely not, zero. I have a Dutch passport so that means I have a roof over my head, I have food to eat and my child can have access to good education. Becoming an entrepreneur was made easier because I have seen the other side for three years. That baby in the verge, what would it do if it had my opportunities? Certainly chasing his dreams! I might earn less, I might be frowned upon, I might drive a ten years old car, but is totally irrelevant. I have a Dutch passport. Then you are rich compared with five billion other people in the world."*

Another 'experiences' indicator has influenced Ein#12's entrepreneurial process by lowering Ein#12's risk averseness, *"because in fact everything I have now I think of it as a bonus."* Ein#12 is the son of a greengrocer and the family was short of money. Sometimes the gas and electricity bills were paid with the money Ein#12 earned with his newspaper round. *"Therefore the fact that I have been that fortunate to live in a country like the Netherlands, was able to study and thus initially was able to get a really good job, has always been a bonus for me on top of what my parents had. So to speak, at a young age I had so much more than my parents ever had. I think this had helped me to always have been free in my choices, it was not hard for me to limit my broader lifestyle."*

The last 'experiences' indicator has led to Ein#12's eureka moment, the idea that still is the core and foundation of his startup. In India Ein#12 came across a project on electric vehicles with the quest

how the entire value chain would evolve and what role the car lease corporate wanted to play in it. *"Then I thought, hey it is not only about the electric cars but it is also about leasing charging stations and perhaps leasing solar panels. I knew nothing about solar panels, I read up on the topic and I had my eureka moment."* To conclude, Ein#12 has used his experiences in the leasing business model to implement the same business model in another technological field.

Ein#12's study business administration is categorized as a 'knowledge' indicator. *"You learn all kinds of things. For me that was a very good basis for leading my company. I gained by my study program. I can read a contract because I have attended legal courses, the same applies for sociology, psychology and technical courses."*

Another personal contingency indicator that has influenced Ein#12's entrepreneurial activities is found in the 'relationships' division. *"After I had been for 15 years in a large corporate, I was at a point in conversation with someone from SnappCar, a startup active in car sharing. Through my network they contacted me and they said hey you have been in the lease industry, can you introduce us to others in your network? In the same conversation I explained what I was working on (the startup), and they replied that they were seeded in the UtrechtInc incubator. Have a look at that place, I think there is something in for you. So we went for it and it was a smart move. Our first customers came from the UtrechtInc network."* Another important network for Ein#12's startup is the Climate-KIC network. *"I accidentally came in contact with Climate-KIC because I interviewed someone from the province of Utrecht, whether they would be a customer of ours. That deal was called off. However, they linked us to the new program they were developing, the Climate-KIC program, who are seeded now here as well (in the UtrechtInc incubator)."*

Interpretation interviewee

"Life is what happens to you when you plan other things" and *"I always say, besides that you need an entrepreneurial team, you need a sh*t load of luck"* are quotations that reflect Ein#12's interpretation of contingency in a proper way. Ein#12 is convinced that if people can let go the mind state that everything is controllable, people can be very happy. Nevertheless, Ein#12 regards contingency as being controllable in a way. *"Partly you must have good fortune, partly you can look out for it. You could say that you can force it."*

Ein#12 indicates the post abroad to India in his pre-startup phase that eventually has led to a change in world view and driver to become a sustainable entrepreneur as a high coincidence factor. The following quotation is about Ein#12's entrepreneurial activities and the role of contingency. *"As a startup you make something out of nothing. And the very first beginning is the hardest part. To get the first detent transposed is very difficult. The second one is difficult, the third one is becoming easier to get transposed. Especially for the first one you need a lot of luck. In other words, you can do a lot, but you need to have the fortune to get these first detents transposed somehow. In our process it was the case with Utrecht University as launching customer and our first funding by Energiefonds Utrecht. Just like coming in contact with Climate-KIC through my network. "*

This view is reflected back when Ein#12 is asked to rank the role of contingency in his entrepreneurial process related to opportunity formation in a scale between 0-10. *"When I think about it I arrive between the 7 and 8, thus 7.5."*

4.4 Interview Fin#1

Contextual background interviewee

Fin#1 is strategic advisor of an organization that originates and select clean tech ideas. It collaborated with its members and partners to close the implementation gap between an idea and a sustainable business. The organization offers business and project support and promotes, coordinates and supports clean tech opportunities.

Interpretation interviewee

First, the facilitating actor's view on the earlier described theoretical concepts that serve as sensitizing concepts such as 'events' and 'trends' indicators are portrayed. Afterwards, Fin#1's organizational perspective related to contingency is discussed. In other words, whether Fin#1 thinks of contingency as controllable and if so, how this is unrolled in practice.

The first insight is related to the 'relationships' indicator. Fin#1 indicates that international clean tech conferences play a significant role in the discovery of these technologies. Before a certain conference takes place, choices are made which technologies are considered to be worth taking a closer look. However, generally speaking this planned manner does not necessary leads to better matches between new clean technologies and further development possibilities and possible applications in the Rotterdam region. *"Still something special is that you will be surprised at times when you least expect it to happen. And you eventually end up with someone or some technology through the network."*

Another insight is related to 'events' indicators. Broadly speaking, Fin#1 indicates that in the Netherlands financing projects is subjected to politics. More specifically, Fin#1 indicates that financing related to the R&D scene is subjected to politics even more. And clean tech technologies are considered to be part of this R&D scene. In other words, 'events' indicators are influencing the developing process of clean tech technologies.

Furthermore, Fin#1 is of the opinion that contingency influences the various stages in the process of successful implementation differently. According to Fin#1, contingency is of less importance in the technical stage, the stage which is purely focused on the development of the clean technology itself, *"because a technology works or does not work."* However, the acceptance of the outside world, described as the soft side of the development process, is considered to be more complex and more dependent on contingency. The final steps, bringing in financial resources and bringing the technology to the market by a launching customer, *"a public authority for example"*, are considered to be most complex and more dependent on contingency.

Even before this technical developing stage, Fin#1 believes that contingency plays a significant role regarding idea generation. *"I think that in idea generation coincidence plays a huge role. If only because you have associations with the things you see around you because you grew up in a certain way, in a certain place and have had certain education."*

Next to these insights related to contingency indicators, now more organizational related insights are discussed. First off, Fin#1 believes that in general people are stuck in something she defines as management thinking. *"The belief that you can direct anything in a specific direction. While perhaps you sometimes have to have some kind of hope and space for coincidence."* To achieve this space and

chase this hope, a certain degree of professional organization is required. *“I think you always should plan to create a foundation from which you operate.”* This foundation can be considered as an ecosystem. *“You actually should see it as an ecosystem in which you invest. Because it can be very hard to define a goal which you are aiming to achieve. It does not work like that in innovation. So we try to invest in that basis but you also need space for that coincidence.”*

Second, this view is also reflected on the Dutch education system. Fin#1 believes that nowadays the scale is tipped in this system. *“There currently exists imbalance to what extent you can choose courses, to what extent I have the freedom to chase a custom-made study program.”* In other words, Fin#1 believes that students should get more freedom to choose for courses they consider valuable in order to facilitate contingency and better entrepreneurship.

In sum, Fin#1 indicates that contingency can have a significant influence in idea generation and in the after technical development stages, for example in bringing in launching customers. From an organizational perspective, Fin#1 indicates that there must be left free space to be able to discover, identify and use contingency. In this sense, organizing everything watertight is counterproductive.

5. Analysis: eight themes addressed

At this point in this paper a representation of the results is given. To be able to answer the research question, all the contingency narratives are analyzed in eight analysis themes. In this analysis section, first a description is given of the NVivo coding data distribution. Second, the concepts of historical and personal contingency are discussed separately. Thereafter, the concepts of historical contingency and personal contingency are discussed together. Then a closer look is taken at contingency related to the entrepreneurial process. Subsequently, the entrepreneurial interviewees and facilitating interviewees' interpretations of contingency are discussed. This whole analysis section is a build up towards the last part that defines the characteristics of contingency.

The three entrepreneurial narratives that are introduced in the results section (Ein#7, Ein#8 and Ein#12) are used when a deeper explanation is needed for the reader to understand the matter fully. The advantage of using examples derived from these three narratives is that the reader is already aware of these examples' context. When it does not matter that the reader is less familiar with the context, and it is of added value to use a wider range of results, examples from narratives which are only displayed in appendix C are used.

5.1 Distribution NVivo data

In this part, the distribution of the NVivo codes over the earlier introduced sensitizing concepts is discussed. This distribution consists of the number of sources and the number of references. The sources are the entrepreneurial interviewees, 16 in total. The references are the NVivo codes that are seen as being relevant and thus are classified in one of the indicator categories. These indicator categories are related to the earlier introduced sensitizing concepts. The number of sources per indicator category can vary because entrepreneurs sometimes did not identify certain contingency indicators that belong to a specific indicator category as being relevant in their process.

Three indicator categories can be considered as centers of gravity regarding the distributed references and the number of entrepreneurial sources, as can be seen in table 1. The first one is the 'events' indicator category in historical contingency, the second one is the 'experiences' indicator category in personal contingency and the third one is the 'relationships' indicator category in personal contingency. All 16 entrepreneurial interviewees have indicated relevant contingencies related to the 'events' category and 'relationships' category, while respectively 13 out of 16 interviewees in the 'experiences' category. Furthermore, the 'events' category contains 103 references, the 'relationships' category 71 and the 'experiences' category 49.

Table 1. Overview distribution references among indicator categories.

Types of contingency	Indicator categories	Sources	References
Historical contingency	Events	16	103
	Trends	13	20
Personal contingency	Experiences	13	49
	Skills	6	10
	Knowledge	6	9
	Relationships	16	71
	Obsessions	9	17

Furthermore, outliers at the other side of the numerically spectrum are the ‘knowledge’ category and the ‘skills’ category, both related to personal contingency, with respectively 6 out of 16 sources and 9 references, and 6 out of 16 sources and 10 references.

Regarding the nature of this research, being qualitative, it is not possible to analyze beyond this descriptive level of analysis and still pursue an academic foundation. However, the descriptive nature of this part is helpful to create a general understanding for the reader regarding the appearance of the different indicators. In other words, which types of contingency indicators seem more to occur.

5.2 Historical contingency

In this part the indicators that are categorized as historical contingency indicators are analyzed. These indicators are categorized as ‘events’ indicators, which are discussed first, and ‘trends’ indicators, which are discussed second. Outstanding details and connecting threads are given.

5.2.1 ‘Events’ category

The ‘events’ indicator category is derived from literature (Harmeling, 2010) and is used as sensitizing concept. The results have shown that this category can more less be seen as a catch-all concept. In other words, the identified ‘events’ indicators are quite diverse and must be classified further into more narrow categories to analyze them thoroughly. These newly formulated categories, composed by the researcher, better cover the identified ‘events’ indicators and show the diversity of the ‘events’ that have influenced opportunity formation and the entrepreneurial processes. In the following table 2 these newly formulated categories are displayed in alphabetical order. Moreover, three examples per category are chosen and displayed. This to justify the suggested classification by clarifying the delineations and to strengthen and deepen to reader’s understanding in these newly formulated categories.

If possible, these three examples are chosen with the existing variety among the contingency indicators within the specific more narrow category in mind. This in order to show the broadest spectrum present regarding contingency indicators within a certain category. As in the previous table 1, the number of sources and references as processed in NVivo per category is added to the table. This gives an impression of the distribution of the indicators between the categories. To complete the table, the examples’ references to their original entrepreneurial narrative are included in table 2 as well. This allows the reader to look up further entrepreneurial context in appendix C, when more context and specifics are needed to understand the matter.

Table 2. New formulated ‘events’ categories.

‘Events’ category	Sources	References	Example indicator+(Ein#)
Business	13	34	Partner cancel worth of 160.000 EUR (Ein#1)
			Being unemployed by bankruptcy employer (Ein#8)
			Post abroad to India (Ein#12)
Contest	4	8	Winning the startup weekend contest (Ein#3)
			Winning Philips innovation Award (Ein#5)
			Winning Climate-KIC alumni startup contest (Ein#11)
Disaster	3	3	Earthquake Nepal April 2015 (Ein#5)
			Big Oil spills (Ein#9)
			Ebola outbreak in Sierra Leone (Ein#15)
Team	3	3	Dysfunctional managerial team member (Ein#6)

			Distractions key PhD team members (Ein#11)
			Conflict between business partners (Ein#16)
Funding	5	7	Acquisition by a large market participant (Ein#6)
			Informal angel investor from scratch (Ein#10)
			First funding by Energiefonds Utrecht (Ein#12)
Loved ones	5	6	Illness daughter (Ein#2)
			Severe pregnancy complications daughter (Ein#4)
			Pregnancy first child (Ein#16)
Market	2	5	Purchase 50.000 solar panels by Urgenda (Ein#4)
			Electric Japanese cars in Europe (Ein#6)
			Estonian tender 200 fast chargers (Ein#6)
Media	3	3	Media exposure starting up company (Ein#6)
			Relevant article in newspaper (Ein#15)
			Pitching event national television (Ein#16)
Policy	5	6	Paris climate agreements in 2015 (Ein#3)
			A sudden subsidy scheme (Ein#10)
			New regulation regarding fish mortality (Ein#15)
Social unrest	3	4	2013 Euromaiden protest in Ukraine (Ein#1)
			Conflict between Russia and Ukraine (Ein#1)
			Suriname on its last legs (Ein#15)
Study	6	12	Startup originated from study project (Ein#5)
			Inspirational study courses (Ein#7)
			Discovery abandoned project by self-study (Ein#14)
Technical	5	6	Technical unreliability core technology (Ein#6)
			Successful prototype test in 2011 (Ein#15)
			Breaking down of car seat heating (Ein#16)
Travel	3	3	Trip to Vietnam (Ein#1)
			Autodidactic international sailing trip (Ein#3)
			Traveling alone (Ein#7)

As can be seen in table 2, the business category contains the most entrepreneurial sources and references, respectively 13 sources out of the 16 and 34 related references. The study category contains 6 entrepreneurial sources out of the 16 and 12 related references. Other than that, the remainder of categories are roughly comparable in terms of the number of sources and references with the exception of a few lower outliers. Furthermore, several details that stand out and one exception are elaborated on further, with the goal of deepening the reader's understanding in these indicator categories.

In the business category, the forced stop of work activities for an employer is often a kick start for entrepreneurial processes. This has occurred in the form of several indicators, like a bankruptcy of an employer (Ein#8 & Ein#13), a non-renewal of a contract (Ein#1), a dismissal (Ein#14 & Ein#15), a business conflict (Ein#4) and a dissatisfaction in work activities (Ein#3; Ein#6; Ein#9 & Ein#16). Other kick start indicators can be found in the loved ones and study categories. In the loved ones category the birth of a child is a common denominator among the indicators (Ein#4 & Ein#12). These indicators have caused changes in views on the world, being drivers of sustainable entrepreneurship. Study projects and courses, indicators in the study category, have provided entrepreneurial inspiration and tangible leads to start entrepreneurial business activities. Another indicator that is

found in the loved ones category and is used as an example in table 2, is an exception. The illness of a daughter indicated by Ein#2 as an influential event, is not experienced in first person. In other words, not Ein#12's entrepreneurial process was influenced, but another person's entrepreneurial process.

5.2.2 'Trends' category

Next to these 'events' indicators, the concept of historical contingency contains another sensitizing concept, namely 'trends' and is identified by the researcher as influential. In contrast with the previous sensitizing concept, the results have shown that formulating new more narrow categories is not necessary. There still is diversity among the indicators. However, this is not considered to be a complication in analyzing thoroughly. Outstanding details and connecting threads are given.

First, a general trend that has been indicated influencing opportunity formation is the rise of markets. The rise of a market at the right time can be the difference between success or failure (Ein#8). Second, a bundle of trends that has occurred in a certain society can influence the entrepreneurial process as well. This bundle of trends has resulted in an aversion to this certain society, in this case the United States of America, which has resulted in a stop in entrepreneurial activities and has been the cause of a move towards Europe (Ein#13).

Furthermore, a majority of the interviewees has illustrated that a fair wind of sustainable entrepreneurship is blowing, at least in the Netherlands. This entrepreneurial vibe ensures that so to speak the soil is fertile regarding sustainable entrepreneurship (Ein#12 & Ein#16). This entrepreneurial vibe is accompanied with a specific way of working that has originated from the Bay Area in the United States of America. This way of working includes for example the lean method and testing assumptions, and is spread over the Netherlands (Ein#3). It is even spread in corporate business structures, which directly is creating business opportunities for entrepreneurs in the form of partnerships (Ein#6). Before the aforementioned entrepreneurial vibe this was inconceivable (Ein#6). From the perspective of entrepreneurs, this implementation of entrepreneurial thinking in the corporate world is accompanied with confidence in future job opportunities, even when the startup fails. This because entrepreneurial skills are needed everywhere in society, which creates a freedom to take risks (Ein#6).

Moreover, this entrepreneurial vibe in the Netherlands facilitates the entrepreneurial process more directly in various ways through services provided by incubators (Ein#10), bringing in funding easier (Ein#11 & Ein#14). Also the sustainable entrepreneurial products are considered as likable by society, which creates several advantages as well (Ein#5 & Ein#15). To conclude, a self-fulfilling prophecy is recognized. The attention and opportunities regarding funding set the entrepreneurs in a position to meet the expectations, which results in more good publicity and funding, and further on (Ein#12).

Before personal contingency is discussed in the following part, a general remark about historical contingency is made. The results have shown that a historical contingency can stand alone, influencing opportunity formation in the entrepreneurial process, like a pitching event on national television (Ein#16). Besides, a historical event can cause a chain collision of other historical contingencies, by creating other contingencies that can cause other historical contingencies and so on. The better known narrative of Ein#8 is used to clarify this with three successive 'events' indicators. The global credit crunch in 2008 causes the bankruptcy of Ein#8's employer, which eventually led to the failed negotiations regarding the takeover of the idea that nowadays still is core of Ein#8's startup.

5.3 Personal contingency

In this part the indicators that are categorized as personal contingency indicators are analyzed. These indicators are divided over the categories ‘experiences’, ‘skills’, ‘knowledge’, ‘relationships’ and ‘obsessions’, which are used as sensitizing concepts and are all derived from literature (Harmeling, 2011). Outstanding details and connecting threads are given.

5.3.1 ‘Experiences’ category

Like the already discussed ‘events’ category, results have shown that the ‘experiences’ category can more or less be seen as a catch-all concept. Namely, the identified ‘experiences’ indicators are quite diverse and must be classified further into more narrow categories to analyze them thoroughly. These newly formulated categories better cover the identified ‘experiences’ indicators and show the diversity of the ‘experiences’ that have influenced opportunity formation and the entrepreneurial processes. Some of these newly formulated categories are comparable to the earlier described ‘events’ ones, like business, study and team. And can be seen as parallel indicator categories in a different main concept.

In the following table 3 these newly formulated categories are displayed in alphabetical order. In addition, if possible three examples per category are chosen and displayed. This to justify the suggested classification by clarifying the delineations and to strengthen and deepen to reader’s understanding in these specific categories. These three examples are chosen with variety within the specific category in mind. This in order to show the broadest spectrum present between indicators within a certain category. As in the previous two tables, the number of sources and references as processed in NVivo per category is added to the table. This gives an impression of the distribution of the indicators between the categories.

Table 3. New formulated ‘experiences’ categories.

‘Experiences’ category	Sources	References	Example indicator+(Ein#)
Business	7	16	Experiencing the natural course of projects (Ein#3)
			Inspirational business project (Ein#12)
			Learning from bankruptcy (Ein#13)
Low spirit	2	3	Learning to open up in rough times (Ein#1)
			Insomnia due to stress (Ein#1)
			Burn out (Ein#6)
Motivation	3	3	Entrepreneurial activities abroad (Ein#7)
			Building trust through investments (Ein#10)
			Being active in Berlins startup scene (Ein#11)
Personal development	5	6	Coaching activities beyond field of expertise (Ein#1)
			Board year study association (Ein#2)
			Identifying barriers in personal growth (Ein#6)
Personal drive	5	6	No satisfaction in corporate world (Ein#3)
			Realization regarding role in society (Ein#5)
			Being a relative millionaire in India (Ein#12)
Study	3	6	Wide interests due to broad study curriculum (Ein#2)
			Being chairman in study projects (Ein#3)
			No satisfaction in study program (Ein#7)
Team	1	1	Being part of dysfunctional team (Ein#6)

Travel	2	2	Autodidactic international sailing trip (Ein#3)
			Traveling alone (Ein#7)
Upbringing	3	3	Values and norms regarding fellow humans (Ein#1)
			Underestimation from family (Ein#7)
			Growing up poor (Ein#12)

As can be seen in table 3, the business category contains the most entrepreneurial sources and references, respectively 7 sources out of the 16 and 16 related references. Other than that, the remainder of categories are roughly comparable to each other in terms of the number of sources and references with the exception of the lower outlier team category. Moreover, details and connecting threads in the business category are discussed further because the number and diversity of references after narrowing down the initial category still is significant. The three examples that are displayed in the table are not able to show this diversity enough.

It seems that bad ‘experiences’ indicators related to business are breeding places for sustainable entrepreneurial activities. From being stuck in corporate structures and cultures, not able to say one’s piece (Ein#1; Ein#6 & Ein#9), to fraud (Ein#13) and not getting what you deserve (Ein#8). Next to this bad experiences, also useful ‘experiences’ indicators have played a role in the entrepreneurial process. First an useful experience that is related to the aforementioned highly remarked ‘events’ indicator bankruptcy. Seeing the storm coming and experiencing it, have affected how things are done nowadays (Ein#13), just like failed projects (Ein#13). To conclude, working on a business project has sparked the inspiration which eventually led to an eureka moment, copying a lease business model to the solar panel industry (Ein#12). In sum, to connect the dots, a bad experience could eventually influence an entrepreneurial process positively.

5.3.2 ‘Skills’ category

Next to these ‘experiences’ indicators, the concept of personal contingency contains another sensitizing concept as category, namely ‘skills’. The entrepreneurial interviewees have indicated that several ‘skills’ they possess were helpful for their entrepreneurial processes. Such as financial savvy, being able to make financial prognoses (Ein#16), models and excel structures (Ein#11). Other skills are related to projects, for instance being able to cope with failure (Ein#15). Regarding the development of products, engineering and crafty skills which enables making prototypes are crucial in some cases (Ein#4 & Ein#5). When the product or service is ready for takeoff, skills in graphic design, cinematography and photography (Ein#8) and sales (Ein#16) contribute to the process also.

However, the underlying question is how the entrepreneurs have gained these skills. The results have shown that other contingency indicators may play a role. The financial skills are gained through a study association board year in the function of treasurer (Ein#11) and previous work experiences (Ein#16), which both are aforementioned ‘events’ indicators. The mentioned crafty skills are gained by study and upbringing (Ein#4 & Ein#5). The remainder of the ‘skills’ indicator are caused by previous work experiences.

5.3.3 ‘Knowledge’ category

The third category is ‘knowledge’. It goes without saying that many ‘knowledge’ indicators have emerged from education. The study program business administration has provided basics in law, sociology, psychology and technical subjects (Ein#12 & Ein#16). Education also has provided general

knowledge in climate change (Ein#4) and the basics in entrepreneurship (Ein#2). However, other sources have been indicated as knowledge sources as well, especially former business activities. The structure (Ein#11) and judgement (Ein#16) of business plans, and knowledge of physics and IT (Ein#13). Sometimes, knowledge has contributed to the personal drive in becoming a sustainable entrepreneur (Ein#4), but most of the time it was beneficial during the entrepreneurial process, because some task and obligations were easier to go through.

5.3.4 'Relationships' category

Just like the 'events' category in historical contingency and the 'experiences' category in this personal contingency part, more narrow new categories need to be formulated in order to analyze the 'relationships' category thoroughly. In the following table 4 these newly formulated categories are displayed in alphabetical order with the three complementary examples to clarify the delineations between the categories.

Table 4. New formulated 'relationships' categories.

'Relationships' category	Sources	References	Example indicator+(Ein#)
Business opportunity	12	29	Father team member State Secretary Nepal (Ein#5)
			Network former colleagues by bankruptcy (Ein#8)
			Network student time (Ein#14)
Business partner/Team	9	12	Meeting fellow student during study course (Ein#5)
			Asked to join through network father (Ein#6)
			Matchmaking by mutual acquaintance (Ein#9)
Coaching	4	4	Receiving feedback through network (Ein#9)
			Friendly professor in technological field (Ein#10)
			Climate-KIC director Netherland (Ein#11)
Funding	4	5	Meeting informal investor at a party (Ein#8)
			Father of girlfriend's friend as investor (Ein#10)
			Network former colleagues financial world (Ein#16)
Home situation	5	7	Supporting role of wife (Ein#9)
			Urge to prove by ambitious father (Ein#13)
			Backed up by family in severe failure (Ein#14)
Inspiration	6	8	Inspiring friends and family (Ein#3)
			Looking up to older entrepreneurial student (Ein#11)
			Motto in life acquired by a former customer (Ein#13)

As can be seen in table 4, the business opportunity category contains the most entrepreneurial sources and references, respectively 12 sources out of the 16 and 29 related references. The second largest category is the Business partner/Team category, which contains 9 sources and 12 related references. Other than that, the remainder of categories are roughly comparable in terms of the number of sources and references. Moreover, beyond the display of the three examples per category, details and connecting threads in the relationships category are discussed further because the number and diversity of references after narrowing down the initial category still is significant. Consequently, the three examples that are displayed in the table do not show this diversity enough.

Some business opportunities that have emerged through relationships are technical by nature. Examples for this are a partnerships with other companies that act as development partner in the Netherlands (Ein#10), in Canada (Ein#14) and in Russia (Ein#1). Other business opportunities have emerged further in the process, when the startup was ready to sell products or services. Utrecht University as launching customer (Ein#12) and a launching customer in Belgium (Ein#8) are indicators that illustrate these kind of business opportunities. However, most of the business opportunities are general of nature and open doors for the startups. Such as an old and everlasting network that has emerged during student time (Ein#14), getting the opportunity to perform a pitch on national television (Ein#16) and being able to use the network of an incubator (Ein#6; Ein#12). To conclude a father's network is considered to have worked out in favor of the startup as well (Ein#5).

5.3.5 'Obsessions' category

It appears that 'obsessions' indicators can have a significant influence on the entrepreneurial process. First and foremost as driver to become sustainable entrepreneur or being active in a certain technical field. Dreaming since childhood of becoming an entrepreneur (Ein#3) and dreaming of becoming an inventor in clean technologies, which later meant being a mechanical engineer (Ein#1) are almost cinematic illustrations of chasing dreams. Furthermore, having a deep passion for water (Ein#15), energy (Ein#4) and having a lifelong pollution aversion (Ein#9), have shaped the direction of entrepreneurial activities, as these entrepreneurs are now being active in hydropower (Ein#15), solar panels (Ein#4) and oil spills (Ein#9). Next to these 'obsessions' indicators that are core of the personal entrepreneurial drive, several others have influenced the more business side of entrepreneurship.

Being interested in 3d printing, first a hobby next to the regular entrepreneur activities, eventually became the focus of the startup (Ein#6). While a passion for skiing, and thus coming in contact with inefficient terrace heaters, eventually has led to developing an idea to solve this inefficacy. Moreover, an obsession with law has helped to be able to take care of this side of entrepreneurship (Ein#5), while having hitchhiking as hobby has strengthened the ability to address people (Ein#2).

Before historical contingency and personal contingency are discussed together, a general remarks on the topic personal contingency is given. Just like as earlier discussed in the historical contingency part, the results have shown that personal contingency can stand alone influencing opportunity formation or can cause other personal contingencies. The better known narrative of Ein#8 is used to clarify this latter thought by describing an 'experiences' indicator that causes a 'skills' indicator. Ein#8's experience as industrial developer at his former employer has caused skills in making texts, in product development and in logistics.

5.4 Historical contingency versus personal contingency

In the previous two themes, historical contingency and personal contingency are discussed separately. This part build on those parts by comparing the two different types of contingency with each other. For this reason it is useful to briefly discuss the difference between the concepts. Historical contingency shapes the world around an entrepreneur, shapes the landscape of an entrepreneur. While personal contingency shapes the personal package of an entrepreneur, shapes the personal development up to present day. In essence, from an entrepreneur's point of view, it is the outside versus the inside. When comparing the two concepts, the origin, the frequency, the duration, the impact and the importance are considered to be the most valuable dimensions when

keeping the goal of this research project at the back of our minds. Which is examining the role of contingency in opportunity formation. First the origin is discussed.

5.4.1 The origin

Before any general pronouncements can be given upon differences regarding the origin between the two main concepts historical contingency and personal contingency, the origins of indicators per indicator category need to be unraveled. In other words, where the indicators have emerged.

When having a closer look at the indicators, a wide variety of origins can be identified, something that is seemingly coupled with the wide variety of the indicators' nature. However, despite this wide variety, a distinction can be made regarding the origin of these indicators. Some contingency indicators have originated figuratively closer to entrepreneurs than others. By this it is meant that some contingency indicators seem to originate at a lower level of abstraction than others. Next to these close-far and high-low in terms of abstraction reasoning, another perspective can contribute in the understanding of this distinction. An origin can be less complex than others.

The 'events' category, which is related to historical contingency, is first used to illustrate the distinction described above. Thereafter the six other indicator categories are discussed. In table 2 several examples of 'events' indicators are given. A partner cancel worth of 160.000 EUR (Ein#1), the illness of a daughter (Ein#2) and the breakdown of a car seat heating (Ein#16) seems to have originated at a lower level of abstraction than the Paris climate agreements in 2015 (Ein#3), the Ebola outbreak in Sierra Leone (Ein#15) and the introduction of electric Japanese cars in Europe (Ein#6).

Indicators categorized in the 'trends' category all seems to have originated at a relatively high level of abstraction. In other words, all seems to have complex origins. In this case, one can think of the rise of markets (Ein#8), the country-wide entrepreneurial vibe (Ein#12 & Ein#16) and the new way of working that arises in business culture (Ein#3). At this point, the two categories related to historical contingency are discussed. The five categories related to personal contingency are discussed thereafter.

Just like the earlier described 'events' category, some of the indicators categorized in the 'experiences' category seems to have originated closer to entrepreneurs than others. A board year in a study association (Ein#2), building trust through investments (Ein#10) and being the chairman in study projects (Ein#3) are experiences that seems to have origins at a lower level of abstraction than being a relative millionaire in India (Ein#12), having no satisfaction in the corporate world (Ein#3) and growing up poor (Ein#12). In other words, the latter three experiences have origins that are more complex than the first three experiences. The other four categories that are related to personal contingency, respectively 'skills', 'knowledge', 'relationships' and 'obsessions' seems to have originated at a relatively low level of abstraction. For example, being able to make financial prognoses (Ein#16)(skills), having learned the basics in entrepreneurship (Ein#2)(knowledge), meeting an informal investor at a party (Ein#8)(relationships) and being interested in 3d printing (Ein#6)(obsessions). The following table provides an overview of the divers categories' origin regarding relative level of abstraction.

Table 5. Overview of the indicator categories' origin regarding relative level of abstraction.

Types of contingency	Indicator categories	Relatively low level of abstraction	Relatively high level of abstraction
Historical contingency	Events	X	X
	Trends	-	X
Personal contingency	Experiences	X	X
	Skills	X	-
	Knowledge	X	-
	Relationships	X	-
	Obsessions	X	-

In sum, results have shown that contingency indicators that are categorized in the 'events' and 'experiences' categories can either have origins that are relatively low in level of abstraction or that are relatively high in level of abstraction, can either have less complex or complex origins. Therefore, it is not possible to generalize between the two main concepts historical contingency and personal contingency regarding the indicators' origin.

5.4.2 The frequency

In this part the comparison between historical contingency and personal contingency is made based on the frequency at which they appear in the entrepreneurial process. To be able to make a rough estimation of the frequency, earlier introduced table 1 is adjusted and casted in a new table displayed below. All the references per contingency type as can be found in table 1 are added up. This results in a rough overview of the mentioned references, and therefore a rough presentation of the frequency as the interviewees described in their narratives.

Table 6. Overview number of references per type of contingency .

Types of contingency	References
Historical contingency	123
Personal contingency	156

The number of references mentioned is not a perfect parallel with the frequency at which the different types of contingency appear in the entrepreneurial process. However, it can be used as rough indication. As can be seen in table 6, there is not much difference between the numbers of references. Therefore the feeling arises that the frequencies are comparable. However, this project is not able to make these kind of statements because a statistical approach would be needed. Therefore, it is not possible to generalize between the two main concepts historical contingency and personal contingency regarding the frequency at which they appear in the entrepreneurial process.

5.4.3 The duration

In this part the comparison between historical contingency and personal contingency is made based on the duration. Before any general pronouncements can be given upon the duration of the two main concepts, the duration of contingency per indicator category need to be taken along. First the

‘events’ category, the first category that is related to historical contingency, is taken into account. In table 2 several examples of ‘events’ indicators were already given. When having a closer look at those examples, a variety of duration can be identified. Some indicators have a shorter duration than other. To illustrate this, examples that are displayed in table 2 are used. A partner cancel worth of 160.000 EUR (Ein#1), a pitching event on national television (Ein#16) and winning the startup weekend contest (Ein#3) seems to have a relatively shorter duration than a post abroad to India (Ein#12), distractions key PhD team members (Ein#11) and an Ebola outbreak in Sierra Leone (Ein#15).

Indicators categorized in the ‘trends’ category all seems to have a relatively long duration. The same examples that are used in the earlier discussed origin part are used here to illustrate this. First the rise of markets (Ein#8), second the country-wide entrepreneurial vibe (Ein#12 & Ein#16) and third the new way of working that arises in business culture (Ein#3).

Next to these historical contingency indicators, personal historical indicators are discussed. Indicators that are categorized in the ‘experiences’ category seems to have diverse durations. For example, an inspirational business project (Ein#12), building trust through investments (Ein#10) and an autodidactic international sailing trip (Ein#3) seems to have a relatively shorter duration than growing up poor (Ein#12), having a burn out (Ein#6) and having a wide interests due to broad study curriculum (Ein#2). The same seems to be the case for the ‘relationships’ category. The following examples illustrate this. Being asked to join a startup through network father (Ein#6), meeting an informal investor at a party (Ein#8) and acquiring a motto in life by a former customer (Ein#13) seems to have a relatively shorter duration than having a supportive wife (Ein#9), having a network developed in student time (Ein#14) and having a network of former colleagues in the financial world (Ein#16).

The ‘skills’, ‘knowledge’ and ‘obsessions’ indicators all seems the have a relative long duration. For example, being able of making prototypes are crucial in some cases (Ein#4 & Ein#5)(skills), having knowledge of physics and IT (Ein#13)(knowledge) and having a deep passion for water (Ein#15)(obsessions). The following table provides an overview of the diverse categories’ relative duration.

Table 7. Overview indicator categories regarding relative duration.

Types of contingency	Indicator categories	Relatively short duration	Relatively long duration
Historical contingency	Events	X	X
	Trends	-	X
Personal contingency	Experiences	X	X
	Skills	-	X
	Knowledge	-	X
	Relationships	X	X
	Obsessions	-	X

In sum, results have shown that contingency indicators that are categorized in the ‘events’, ‘experiences’ and ‘relationships’ categories can either have short durations or long durations.

Therefore, it is not possible to generalize between the two main concepts historical contingency and personal contingency regarding the indicators' duration.

5.4.4 The impact

The impact of contingency on opportunity formation consists of two subdivisions itself, namely having a positive or a negative outcome and having a small or a large magnitude. These two subdivisions are discussed in that particular order. The results have shown that regarding historical contingency, both 'events' indicators and 'trends' indicators can either have positive impacts or negative impacts. Examples for positive indicators are winning the Philips innovation Award (Ein#5)(events) and the country-wide entrepreneurial vibe (Ein#12 & Ein#16)(trends). Examples for negatives indicators are a partner cancel worth of 160.000 EUR (Ein#1)(events) and an aversion to a specific society (Ein#13).

Regarding personal contingency 'experiences' indicators can either have positive outcomes or negative outcomes. Examples for positive indicators are having a burn out (Ein#6) and having insomnia due to stress (Ein#1). Examples for negatives indicators are learning from bankruptcy (Ein#13) and being chairman in study projects (Ein#3).

The results have shown that the 'skills', 'knowledge', relationships' and 'obsessions' indicators all seems to have a positive impact. Examples for positive indicators are being able to make financial prognoses (Ein#16), knowing the basics in law, sociology, psychology and technical subjects (Ein#12 & Ein#16)(knowledge), knowing a friendly professor in technological field (Ein#10)(relationships) and having a deep passion for water (Ein#15)(obsessions). The following table provides an overview of the diverse categories' positive or/and negative impact.

Table 8. Overview indicator categories regarding outcome impact.

Types of contingency	Indicator categories	Positive outcome	Negative outcome
Historical contingency	Events	X	X
	Trends	X	X
Personal contingency	Experiences	X	X
	Skills	X	-
	Knowledge	X	-
	Relationships	X	-
	Obsessions	X	-

The second subdivision is related to the magnitude of the impacts that contingency indicators have on opportunity formation. When looking at the results the feeling exists that every contingency indicator that is identified has an unique magnitude impact on opportunity formation in the entrepreneurial process. What seems like for instance a small 'events' indicator in the beginning could have a tremendous positive or negative impact later on. However, the nature of this project did not allow to examine the exact magnitude every individual contingency has had on opportunity formation.

In sum, results have shown that contingency indicators that are categorized in the 'events', 'trends' and 'experiences' categories can either have positive or negative impacts. In addition, no pronouncements can be made upon the magnitude that contingencies have on opportunity

formation. Therefore, it is not possible to generalize between the two main concepts historical contingency and personal contingency regarding the indicators' impact.

5.4.5 The importance

When comparing the two different types of contingency with each other, immediately the question arises which of the two is most important for opportunity formation in the entrepreneurial process. In this case the importance is the product of how many times a contingency indicator has influenced and how big this influence is. In other words, multiplying the frequency by the magnitude. This means that two problems exist when examining the importance.

As mentioned before, this project is not able to make statements on the frequency of the two types of contingency. Even if the feeling that the frequency between historical contingency and personal contingency is more or less the same would be confirmed, then this would mean that this frequency would not be a distinguishing factor anymore in terms of importance. More importantly, this project is not able to examine the magnitude every contingency has had on opportunity formation. Therefore, no claims can be made about which of the two types of contingency is most important for opportunity formation in the entrepreneurial process.

Before contingency related to the different entrepreneurial phases are discussed in the following part, several general remarks related to the interaction between historical contingency and personal contingency are made. First of all, in theme 2 and 3 results it is discussed that personal contingency indicators can cause other personal contingency indicators and historical indicators can cause other historical indicators. In this theme 4 it is clarified that that historical contingency and personal contingency can be intertwined. In other words, a historical contingency can cause a personal contingency or vice versa. The better known narrative of Ein#12 is used to clarify this intertwining types of contingency. In the case of Ein#12, an 'events' indicator has caused an 'experiences' indicator. He was posted abroad by his former employer and as an expat Ein#12 experienced what it is like to be a relative millionaire, which causes a change in his world view and eventually was a driver to become a sustainable entrepreneur.

Second, the results have shown that the differences identified between the seven indicator categories are not dependent on differences between the two main concepts historical contingency and personal contingency. In other words, the seven indicator categories should be seen as autonomous concepts with their own specific characteristics. Therefore in the remaining three analyzing themes the comparison between the two main concepts historical contingency and personal contingency is dismissed.

5.5 Contingency and entrepreneurial phases

This part reflects on contingency and its role during the entrepreneurial process. For this reason it is useful to briefly mention the three different phases which the entrepreneurial process consists of, respectively 1) the pre-startup phase, 2) the startup phase and 3) the growth phase. It is examined whether contingency plays a distinctive role during these three different phases. Moreover, with three phases being used to catch the time dimension, consequently two transition periods are present, namely from phase 1) to 2) and from phase 2) to phase 3). It is examined whether contingency plays a distinctive role during these two transitions as well. Examples derived from narratives Ein#7, Ein#8 and Ein#12 are used as guidance in discussing phase 1, transition 1, phase 2, transition 2 and phase 3.

As can be seen in appendix B, the research sample consists of eight entrepreneurial interviewees who are currently in the startup phase and eight entrepreneurial interviewees who are currently in the growth phase. Consequently, a part of the entrepreneurial interviewees was not able to reflect on their growth phase, a phase they have not arrived at (yet).

Despite of this skewed sample, which was accounted for regarding the rarity of startups in the growth phase, the results have shown that the centre of gravity concerning contingency lies in the beginning of the entrepreneurial process. This line of thought is supported because the eight entrepreneurial interviewees that have reached the growth phase, especially have highlighted the beginning of their entrepreneurial process as being liable to the role of contingency. Several contingencies that have emerged in the pre-startup phase turned out to have a significant influence on the entrepreneurial process. Or in becoming sustainable entrepreneur at all.

Two of the three better known entrepreneurial narratives, which are displayed in the results section, are in the growth phase. The complementary contingency indicators are used to display the thought of contingency being more influential in the beginning of the process. For instance, following a business economics class during high school in 2004 (Ein#7) has led to an urge to succeed in entrepreneurship. Another study related indicator is studying business administration (Ein#12), a good basis for leading a company formed by law, sociology, psychology and technical courses. While being a former industrial developer (Ein#8) has brought experience in making websites, making texts and handling logistics. Skills in graphics (Ein#8) turned out to be useful in making photos and movies of the product. To conclude, growing up poor (Ein#12) has led to always be free in making choices, because nowadays everything is considered to be a bonus. All of these indicators have emerged during the pre-startup phase and turned out to be influential throughout the whole entrepreneurial process.

Several indicators that have emerged in the pre-startup phase have eventually led to transition 1. Without the bankruptcy of his employer in 2009 (Ein#8) and the failed negotiation with a market participant for possible take-over of the core idea, Ein#8 would have been still working with in the corporate world. Without being posted abroad in India (Ein#12) and experiencing being a relative millionaire in a poor country while Ein#12's son was born, Ein#12 would have been still working with his car leasing company. Besides, a project in India eventually has led to Ein#12's Eureka moment, using a proved business model in a sustainable sector. Without not liking to study (Ein#7), traveling alone, attending entrepreneurial study courses, working with a student discount card organization, Ein#7 may not have been sure about being an entrepreneur. These indicators are considered to be kick-starts for sustainable entrepreneurship.

In the startup phase, especially in the beginning, contingency is considered to play a significant role as well. For instance, through the network of Ein#8's former bankrupt company, an opportunity in Belgium occurred before the startup even has had developed a decent prototype. After the subsidy schemes in Belgium were expired, which was the lifeblood of the startup, a market developed in the Netherlands precisely at the right time (Ein#8). Furthermore, having Utrecht University as launching customer (Ein#12) was dependent on the right timing as well, because the university was organizing a sustainability week for the first time.

The results have shown that influential indicators that have emerged during transition 2 and the growth phase are more scarce. However, they still occurs. For example, the Paris climate agreement

established in 2015 (Ein#8) and market developments (Ein#8) can influence the opportunity formation in the entrepreneurial process.

In sum, some contingency indicators can play a role throughout the whole entrepreneurial process. One can think of 'skills' indicators or 'trends' indicators. Furthermore, it seems that contingency particularly plays a significant role in the pre-startup phase, when the entrepreneur in the making needs a push to actually become one. To conclude, it seems that that contingency plays a significant role also in the startup phase, when the entrepreneur tries to make something out of nothing. In that phase, a helping push in the right direction is most welcome.

5.6 Interpretation entrepreneurs

The previous themes in this analysis are mainly focused on contingency itself. This theme reflects on the sustainable entrepreneurs' interpretation regarding the importance of contingency in their entrepreneurial process. In other words, how is comparatively speaking contingency considered by the entrepreneurial interviewees as important factor relative to other factors which they can fully control. Such as creating a business plan, making a financial prognosis and having a strategy. To examine this, the entrepreneurial interviewees were asked to rank the role of contingency in their entrepreneurial process related to opportunity formation in a scale from 0 to 10.

The results have shown that three groups of entrepreneurs exists. The first group consists of entrepreneurs that has ranked the role of contingency as 5 or lower and is therefore labelled as the low group. The second group consists of entrepreneurs that has ranked the role of contingency from 5 to 7 and is therefore labelled as medium group. The third group consists of entrepreneurs that has ranked the role of contingency from 7 up to and including 10 and is therefore labelled as high group. Some of the entrepreneurial interviewees indicated that it was too difficult to rank the role of contingency. In these cases, their statements about the role of contingency in the entrepreneurial process related to opportunity formation were used to categorize them in one of the three aforementioned groups. The results have shown that the low group consists of Ein#7 and Ein#9. Ein#1, Ein#3, Ein#4, Ein#8, Ein#10, Ein#13 and Ein#15 form the medium group. The third high group consists of Ein#2, Ein#5, Ein#6, Ein#11, Ein#12, Ein#14 and Ein#16. In the table below an overview is given of the entrepreneurs' distribution over the groups.

Table 9. Overview distribution entrepreneurs over groups related to interpretation contingency.

Entrepreneurial group	Entrepreneurs
Low	2
Medium	7
High	7

As can be seen in table 9, it tends that most of the entrepreneurs consider contingency as important factor relative to other factors which they can fully control. Next, the connecting threads per group are discussed. Afterwards, overarching connecting threads for the entire group are described and general remarks are made.

The entrepreneurs in the low group believe that most contingency factors can be shaped and dictated by entrepreneurs. The manipulability in opportunity formation is great (Ein#7). If one is looking for something, is receptive for new things, then those things automatically come to one

(Ein#9). Also, risks can be identified and can be beared in mind (Ein#7 & Ein#9). Therefore, the role of negative contingency factors can be minimized. Both Ein#7 and Ein#9 have acknowledged that some contingency cannot be controlled and can be influential in the entrepreneurial process. However, leaving aside extreme events such as severe illness and disasters, opportunity formation in the entrepreneurial process can be controlled to a high extent.

The entrepreneurs in the medium group believe that contingency can play and has played a significant role in opportunity formation in the entrepreneurial process. But a certain degree of control is possible, like going to a conference and meeting the right person (Ein#8). Having a good starting point is helpful, such as having a good business partner or having useful knowledge, but barriers must be overcome by oneself (Ein#13). Therefore, without certain events, the path would have been different, the outcome would be the same (Ein#8). One wants to deny contingency by nature, but several big events have played a crucial role in the process, like the bankruptcy of an employer (Ein#8 & Ein#13). In sum, contingency in opportunity formation is considered to be a game of chance wherein one can increase one's chances (Ein#4).

The entrepreneurs in the high group have experienced a lot of contingencies that significantly affected the opportunity formation in the entrepreneurial process. The general opinion in this group is that entrepreneurship is coherent with opportunities and therefore with contingencies also. Like being ready at the right moment to take advantage of the introduction of Japanese cars in Europe (Ein#6). Additionally, the entrepreneurial process could have been so different if at times just something else had happened, that some entrepreneurs would have been out of business. Or would have never come up with that idea that is now the core of the startup (Ein#16). Or would have never been a sustainable entrepreneur at all (Ein#12). However, the majority of this group still thinks that some contingencies indicators can be controlled to a certain degree. For example, meeting someone at the right place at the right time.

In sum, all three groups consider contingency as being controllable to a certain degree. In essence, the difference in interpretation of the degree of controllability delineates the three groups. This difference in interpretation could have been caused by the number and the nature of contingencies that every individual entrepreneur has experienced during their entrepreneurial process. In other words, when an entrepreneur has experienced several influential contingencies during the entrepreneurial process that were beyond control, it is likely that this entrepreneur highly values the role of contingencies. It is the other way around when an entrepreneur has experienced several influential contingencies during the entrepreneurial process that were controllable. This thought is elaborated further in analysis theme 8, characteristics of contingency. To conclude, entrepreneurs seem to value the role of contingency higher in the beginning of their process, which is in line with the matter discussed in the previous theme.

5.7 Interpretation facilitating agents

In this part the results derived from the three helicopter view interviews are discussed. In general, no essential contradictions between entrepreneurial interviewees and facilitating interviewees are identified. In other words, contingency is not experienced differently within the bubble that is running an entrepreneurial company and outside this bubble. In addition, some managerial insights are given that never would have been identified when interviewing entrepreneurs only.

In general people need a push to develop themselves, something in which contingency can play a role (Fin#3). More specifically, potential entrepreneurs sometimes need a push. They can be dissatisfied with their activities in the corporate world for a long time without changing anything. A contingency, such as an economic crisis, could act as a kick-start for their entrepreneurial ambitions (Fin#2). Some contingencies, especially the ones that occur through networks, can be pulled in by taking up challenges (Fin#3). Regarding the entrepreneurial process, it is believed that contingency plays a more significant role in idea generation than in technical development. This because one is associating with one's surrounding all the time, one grew up in a certain way and one followed certain education (Fin#1). Additionally, contingency is considered to play a large role in the soft side of the process, like bringing in grants and getting a launching customer (Fin#1). Other contingencies are comparable with DNA, and are passed from generation to generation (Fin#2). For example skills and passions.

Just like entrepreneurs, facilitating agents believe that contingency is controllable to a certain degree. It is believed that stimulating contingency can be planned. Making strategies to use contingency into one's advantage must be taken into mind (Fin#1 & Fin#2). Space must be created to be able to detect and use contingencies (Fin#1 & Fin#2). For example, sitting behind one's desk for a whole day creates a tunnel vision and is therefore not contributing to achieve this. A base in professionalism regarding rules in communication, appointments and strategy must be made to make it work (Fin#1). From there contingency can be stimulated by planning network events and by building diverse and fresh communities (Fin#2). In other words, entrepreneurial ecosystems should be invested in (Fin#1), as a result unexpected connections can be made by entrepreneurs (Fin#2).

5.8 Characteristics of contingency

This part summarizes the insights that are discussed in the previous seven research themes and builds further on those. In this way, the characteristics of contingency are defined.

Theme 2 has showed that historical contingency indicators can stand alone or can cause a chain collision of other historical contingencies, by creating other contingencies that can cause other historical contingencies and so on. In both ways these historical contingency indicators can influence opportunity formation in the entrepreneurial process.

Theme 3 has showed that personal contingency indicators can stand alone influencing opportunity formation or can cause other personal contingencies that eventually can influence the entrepreneurial process.

Theme 4 has showed that historical contingency indicators can cause personal contingency indicators and the other way around. Besides, the results have shown that the differences identified between the seven indicator categories are not dependent on differences between the two main concepts historical contingency and personal contingency. In other words, the seven indicator categories should be seen as autonomous concepts with their own specific characteristics. In addition, contingency indicators can have a negative or positive impact on opportunity formation in the entrepreneurial process with a diverse magnitude and duration.

Theme 5 has shown that contingency indicators occur throughout the whole entrepreneurial process. Furthermore, it seems that contingency indicators particularly play a significant role in the beginning of the process, in the pre-startup phase and startup phase.

Theme 6 has showed that sustainable entrepreneurs consider contingency indicators as being controllable to a certain degree.

Theme 7 has showed that facilitating actors consider contingency indicators as being controllable to a certain degree.

Therefore, several characteristics of contingency can be defined:

- contingency can influence opportunity formation in the entrepreneurial process
- contingency can have a negative or a positive impact on opportunity formation in the entrepreneurial process
- contingency can cause other contingencies to emerge
- contingency can have different magnitudes regarding the impact on opportunity formation in the entrepreneurial process
- contingency can have different durations
- contingency can be controlled to a certain degree.

In the following conclusion section these characteristics of contingency are discussed in the light of this project's research objective and the complementary research question.

6. Conclusion: the role of contingency

This qualitative project aims to illustrate the role of contingency as a potential explanatory factor in the process of opportunity formation, a factor currently more or less overlooked in entrepreneurship literature (Harmeling, 2011). Sustainable entrepreneurship is chosen as this project's research scope. This delineation is among other things made to study contingency as optimal as possible. In sustainable entrepreneurship it is essential to change existing systems and values to make radical opportunity formation possible (Dean, 2013; Schaper, 2002; Thompson et al., 2014). This societal change takes place at a high level of abstraction, beyond the direct influence of a sustainable entrepreneur. Being dependent on phenomena beyond their control, it is therefore expected that contingency plays a more significant role in sustainable entrepreneurship than for instance classical entrepreneurship or classical business activities. In other words, it is considered that sustainable entrepreneurship is a process in which contingency plays a more than average role when compared to other business processes. Consequently, contingency's influence on opportunity formation can be detected and examined with more ease. The narrative approach has enabled to illustrate the role of contingency as a potential explanatory factor. Therefore, the following research question is answered:

What is the role of contingency in sustainable entrepreneurial opportunity formation?

The findings show that the great majority of entrepreneurs considers that contingency is a relative large explanatory factor in the process of opportunity formation compared to other factors which they can fully control. Furthermore, different dimensions are addressed. First, the dimension time. Sustainable entrepreneurship is an evolutionary process (Harmeling, 2011; Sarasvathy, 2001) and time is caught in the aforementioned three entrepreneurial phases. Contingency can influence the entire entrepreneurial process, one of the three entrepreneurial phases and specific moments in these entrepreneurial phases. Furthermore, it seems that contingency is a larger explanatory factor of opportunity formation in the beginning of the entrepreneurial process, covering the pre-startup phase and the startup phase. In the pre-startup phase several contingencies are detected that were the underlying motivation for multiple sustainable entrepreneurs to decide to become one. While in the startup phase several contingencies are detected that were the deciding factor between success or failure. In the latter growth phase influencing contingencies are still detected, however it seems broadly speaking that contingency in this phase is a smaller explanatory factor of opportunity formation.

The second dimension is the impact of contingency in the entrepreneurial process and consists of the outcome and the magnitude. The outcome of contingencies can be either negative or positive. The magnitude of contingencies can be diverse. A contingency that appears to be small at first can have a tremendous positive or negative impact later on in the process.

The last dimension is controllability or manipulability. It is considered that contingency is to a certain degree controllable and can be planned up to a certain point. Therefore, sustainable entrepreneurs can to a certain degree influence the role of contingency in their opportunity formation. In other words, sustainable entrepreneurs seem to be able to increase their chances in contingency.

7) Discussion: beyond the research and recommendations

This final section reflects on the research design, the research execution and the results obtained. The theoretical implications, the limitations of the research, recommendations for futures research, and policy and managerial implications are addressed.

7.1 Theoretical implications

The results of this research confirms several statements of prior research. Harmeling (2011) already suggested that contingency is an important factor in the process of the initiation of a venture with the goal to exploit an entrepreneurial opportunity into an artefact. In other words, that contingency is important in the transition process from the pre-startup phase towards the startup phase. This project's results have shown that this is the case in sustainable entrepreneurship. Several contingency indicators, categorized in diverse indicator categories, are considered to be of significant, sometimes crucial in the process of starting a sustainable startup. For example, the supporting role of wife (Ein#9), growing up poor (Ein#12) and being unemployed by bankruptcy of employer (Ein#8). By the same token, Harmeling (2011) suggested that contingency is considered to be an important factor in the process of the accumulation of required resources to bring an entrepreneurial artifact to life. In other words, bringing in funding, business partners and launching customers in the entrepreneurial process. These statement is supported by this project by the identification of contingency indicators such as a network of former colleagues by bankruptcy (Ein#8), meeting an informal investor at a party (Ein#8) and a pitching event national television (Ein#16).

Furthermore, prior research is extended by examining the entrepreneurs' interpretation on the topic. Those show that the great majority of entrepreneurs interpret the role of contingency in their opportunity formation as significant. In other words, it is considered by the sustainable entrepreneurs themselves that contingency is a relative large explanatory factor in the process of opportunity formation compared to other factors which they can fully control. In addition, it is found that contingency indicators can have different impacts on the process, a negative or positive and a small or large impact. Another new insight is the interpretation of contingency's controllability. In general the entrepreneurial interviewees argue that contingency is controllable to a certain degree. Among the interviewees there is no consensus on this degree of controllability, so different groups of entrepreneurs are identified. Furthermore, a large number of diverse contingency indicators are identified and new contingency categories are formulated, resulting in a more sensitive classification of contingency indicators.

As mentioned in the previous analysis section, beyond the difference in meaning, no general statements can be made about the distinction between the two main concepts historical contingency and personal contingency. Those concepts are too broad and include various contingency indicators. Instead, distinctions can be made between the seven indicator categories. In other words, those contingency indicators are better fit to be units of analysis, having specific characteristics themselves. Also, in the analysis section several contingency characteristics are introduced. Another addition to literature is the composed 'trends' indicator category. Trends contingency indicators are important indicators both for the whole entrepreneurial process and as breeding ground for other contingency indicators and opportunities.

Moreover, adding the entrepreneurial phases to the contingency topic is useful as well. The foremost outcome is that contingency seems to be a larger explanatory factor of opportunity formation in the beginning of the entrepreneurial process, covering the pre-startup phase and the startup phase. This is in line with the aforementioned argument that serves as the foundation of the research scope to be sustainable entrepreneurship, which is as follows. To diffuse sustainable innovations, which are considered to be of radical nature, and utilize entrepreneurial opportunity, business environments, market regulations, and societal norms and values have to change (Thompson et al., 2014). In other words, economic systems and institutions have to change (Dean, 2013). Therefore, one could argue that this change is not so far developed in the beginning as later on in the process. This could explain the importance of contingency in the beginning.

Further, the different levels of abstraction identified regarding the origin of contingency reminds of the Multilevel Perspective (MLP), a conventional theory in innovation literature introduced by Geels (2002). It seems to be that contingencies could emerge in the landscape like level of abstraction, the regime like level of abstraction and the niche like level of abstraction. Therefore, contingency indicators might be integrated with MLP as possible explanatory factors that influence the transition from the niche level to the regime level.

To conclude, the three composed entrepreneurial groups can be seen as three typologies to what extent contingency is considered to influence an entrepreneurial process: low, medium or high. In other words, entrepreneurial contingency narratives can proceed in three different ways. At least, this is how sustainable entrepreneurs experience it. It is considered that this difference in interpretation is caused by the difference in contingencies the entrepreneurs have experienced during their entrepreneurial process. If an entrepreneur is confronted with contingencies that are on average less controllable and have a larger impact, then it is likely that the entrepreneur considers the role of contingency to be high in the entrepreneurial process. In the future research part, is it addressed how this perspective of these three typologies can be a stepping stone for further projects.

7.2 Limitations of the research

This project has a number of limitations. First, the research sample might be skewed in favor of entrepreneurs that have great stories about how contingency affected their opportunity formation in the entrepreneurial process. In general, it is not easy to convince (sustainable) entrepreneurs to take part in a study. Besides the fact that their time is valuable and always running out, (sustainable) entrepreneurship is a hot topic in the academic world. Currently entrepreneurs who are seeded in or attached to incubators are flooded with research requests, because they are easily approachable due to up-to-date websites with contact details. Therefore, an entrepreneur with great contingency stories might have been triggered earlier to join than others with more regular stories. Second, making an exact distinction between the startup phase and the growth phase during the interviews was sometimes hard to execute. Not always a narrative was told in chronological order. With a view to the flow of the interview it appeared to be not practical to interrupt the narrative at all times. Consequently, for some contingency indicators it is not exactly clear whether they took place just before or just after hiring staff beyond the initial entrepreneurial team. However, this turned out to not be a severe problem, because the centre of gravity in terms of relevance were found to be the first two phases, between which the distinction was very clear. Additionally, not all entrepreneurial interviewees have arrived at the growth phase (yet). Therefore not all interviewees were able to give

insight about the whole entrepreneurial process, including the growth phase. However, the sample is balanced and half of it consists of entrepreneurs in the growth phase. This ensures that the growth phase is not underexposed.

Third, from the entrepreneurial interviewee's perspective it was sometimes hard to rank the role of contingency as explanatory factor of opportunity formation in their entrepreneurial process. It proved sometimes to be a too complex question to answer right away. Once again, considering the flow of the interview and the number of indicators it was not practical to interrupt the interviewee per separate contingency indicator and ask about their interpretation of this particular contingency indicator's role in their entrepreneurial process. However, this is compensated by using the interviewee's statements about the topic and reading between the lines. By doing so the entrepreneurs could be classified over the three different groups without problems. To conclude, several limitations are accompanied with the qualitative nature of this project. Such as possible misinterpretations of the interviewees and researcher, not optimal objectivity by the interviewees and researcher, and limited generalizability. The generalizability, the external validity of this project (Bryman, 2008), is increased by the diverse research sample in terms of industries the entrepreneurial interviewees are active in. This is in line with the concept of sustainable entrepreneurship, which covers a lot of industries (Dean, 2013). However, it is doubtful whether this project's insights also apply in classical entrepreneurship and broader business activities.

7.3 Recommendations for future research

As mentioned in the theoretical implications part, sustainable entrepreneurs have different interpretations of the role of contingency in opportunity formation. Further research can dive into the cause of this difference. Is it caused by the entrepreneurs subjectivity or is it caused by objectively demonstrable differences in the contingency narratives?

Furthermore, findings show that contingency is a relative large explanatory factor in the process of opportunity formation compared to other factors which the entrepreneurs can fully control. Further research can examine what circumstances shape this contingency. Can personal competences like being more involved in networks or being more present at certain places like an incubator shape contingencies?

As mentioned in the limitations part, this project was not able to measure the impact of the isolated contingency indicators to the entrepreneurial process as whole. When this impact is measured and quantified, it is easier to determine the impact of contingency in the individual contingency narratives. After identifying those indicators, in future projects the entrepreneur could rank them afterwards in the particular order of importance it is considered to be.

To conclude this part, several proposed hypotheses are formulated. These hypotheses have originated throughout the whole project and can be leads for further studies that are more of quantitative nature.

H1 contingency indicators can influence opportunity formation in the entrepreneurial process.

H2 contingency indicators have different impacts on opportunity formation in the entrepreneurial process.

H3 contingency indicators cause other contingencies to emerge.

H4 contingency indicators have different magnitudes regarding the impact on opportunity formation in the entrepreneurial process.

H5 contingency indicators have different durations.

H6 contingency indicators can be controlled to a certain degree.

7.4 Policy and managerial implications

Contingency is always seen as something beyond control, something that one wants to avoid, something that one wants to deny. To a certain extent this is true. Some contingency indicators are unpredictable and cannot be planned for. And can have devastating consequences for the harmed. However, an entrepreneur could keep in mind that certain things can happen when making decisions and strategies, instead of trying to avoid or deny them. In other words, by executing decent risk management an entrepreneur can influence indirectly the consequences of unpredictable contingency. For example, what to do when one of the team members gets ill. Therefore, creating awareness for the possible significant role contingencies could play is a managerial implication.

From a policy perspective, it might pay off to shift the investment focus. Investing in a few predefined entrepreneurial 'winners' startups might not be regarded as efficient spending of public money. The underlying reason for this is that it seems almost impossible to predict a startups success beforehand, because many unpredictable factors could play a role in the entrepreneurial process and possible success. These 'winners' or gazelle's (Nightingale and Coad, 2013) are judged on their technological promise, possible market infiltration and other so-called foreseeable features using financial prognoses and other predictive tools. Besides that these factors are hard to predict exactly, this study shows that several other factors can play a influencing role in the success, for example entrepreneurial team problems. Instead, investing in the entrepreneurial ecosystem might be more beneficial at macro societal perspective. It is not suggested to shift the whole focus all at once. But the ratio between individual spending and ecosystem spending could be changed a bit. Thereafter, one could examine the resulting outcome. Next to creating awareness that some contingencies can be harmful beyond control of the entrepreneur, creating awareness that other contingencies are to a certain degree controllable is just as important. One way to implement this thought is to strive for a certain way of working. A professional base consisting of agreements on communication, planning and strategy is core in this way of working. Next to these base, there should be space left to escape the common tunnel vision, opening up to detect contingencies and use them in the process. In other words, opportunities in contingency are missed by only sitting behind one's desk

To conclude, contingencies that emerge through networks can be stimulated. From an incubator manager's perspective, more Q&A sessions between more experienced entrepreneurs and new kids on the block about specific topics could open doors for both parties. In this way, relevant links between one other's network lay bare. In addition, regarding network activities and pitch events, better information beforehand related to the participant could lead to better matchmaking and more relevant connections.

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Appendix A: Interview script (operationalization)

In this appendix the interview script is displayed.

Part A: Graph

- Can you describe your organization?
-Description, Goals, vision, mission
- What is your function within this organization, both official and pragmatic?
- What is the organization's history?
- *Graph*
- To what extent did contingency played a role in the process?
-0-10

Part B: Introducing contingency

- How is contingency part of your (entrepreneurial) life?

Entrepreneur Steve Jobs refused to attend Berkeley and Stanford, because he did not find these universities artistic and interesting enough. Therefore, he went to the private Reed College, a college which his parents could not really afford. He was bored by the mandatory classes and went to other classes which he liked instead. When he felt guilty about the seemingly useless spending of his parents' savings, he decided to leave college. Thereafter Steve Jobs joined classes without paying, something which was curiously tolerated by Reed. Among other classes he attended a calligraphy class he liked because of the new insights. According to him, this coincidence of circumstances has played a major role in his later entrepreneurial success. "If I had not attended that particular class, then the Mac never had so many different fonts and proportional spacing, but only a type machine character. And since Windows copied the Mac, it is likely that no single PC have had it"

-Definition contingency: *an occurrence with implications for entrepreneurial opportunity formation which is perceived by the actor-in-focus as randomly originated.*

Part C: Historical contingency

- How have external events played a role in your (entrepreneurial) life?
- How has trends played a role in being a sustainable entrepreneur?

Part D: Personal contingency

- Why did you decide to start a new business?
- How have relationships with other people played a role in being a sustainable entrepreneur?
- How have your interests/hobbies played a role in being a sustainable entrepreneur?
- How have your skills played a role in being a sustainable entrepreneur?
- How has your knowledge played a role in being a sustainable entrepreneur?
- How have experiences played a role in being a sustainable entrepreneur?
-

Part D: Entrepreneurial phases

- Why did you decide to start a new business?
- To what extent has contingency played a role in starting your enterprise?
- How has contingency played a role in starting your enterprise?
- To what extent has contingency played a role in developing your enterprise?
- Do you have an employee hired that was not part of the initial team?

- How has contingency played a role in developing your enterprise?
- How do you think contingency plays a role in the near future?

Part E: Closing

- -Comments?
- -Later insights can be reported by e-mail.

Appendix B: Anonymized list of interviewees

This appendix displays the anonymized list of interviewees in table 1. The function, the sector, the entrepreneurial phase and if applicable the incubator is given.

Table 1. Anonymized list of interviewees.

Code	Function	Sector	Phase	Incubator
Ein#1	Founder	Recycling	Growth	ECE
Ein#2	Co-founder	Energy device	Startup	-
Ein#3	Founder	Construction	Startup	Hanz
Ein#4	Co-founder	Sustainable energy	Startup	Hanz
Ein#5	Co-founder	Hydropower	Growth	Yes!Delft
Ein#6	Co-founder	Sustainable energy	Growth	Yes!Delft
Ein#7	Co-founder	Printing	Startup	Yes!Delft
Ein#8	Founder	Solar panel	Growth	UtrechtInc.
Ein#9	Partner	Oil cleaning	Startup	Yes!Delft
Ein#10	Founder	Solar panel	Growth	Yes!Delft
Ein#11	Co-founder	Thermal	Startup	-
Ein#12	Founder	Solar panel	Growth	UtrechtInc.
Ein#13	Founder	Sustainable energy	Growth	Greenhouse
Ein#14	Director	Fiber	Startup	Greenhouse
Ein#15	Founder	Hydropower	Startup	Greenhouse
Ein#16	Founder	Thermal	Growth	UtrechtInc.
Fin#1	Strategic advisor	-	-	ECE
Fin#2	Community builder	-	-	Greenhouse
Fin#3	Ambassador	-	-	-

Appendix C: Contingency narratives

In this appendix the results of the 16 entrepreneurial interviews and the 3 facilitating interviews are displayed.

4.1 Narrative Ein#1

Contextual background interviewee

Ein#1 is founder of a startup that is active in the recycling sector. The interviewee is sustainable entrepreneur since 2007 and the current startup Ein#1 is involved in is founded 2011. The startup's core business is to gather the remainder of recycled plastics that is currently useless and make energy out of it. The startup has signed a first employee beyond the firm's initial team. Therefore the current entrepreneurial phase can be categorized as growth phase. Examples of the entrepreneur's achievements are having several international departments, international partnerships and a large order from the Dutch Ministry of defence. In the figure hereunder, the pattern of Ein#1's entrepreneurial process regarding success over time is displayed. This pattern can be used as guidance during the following entrepreneurial narrative.

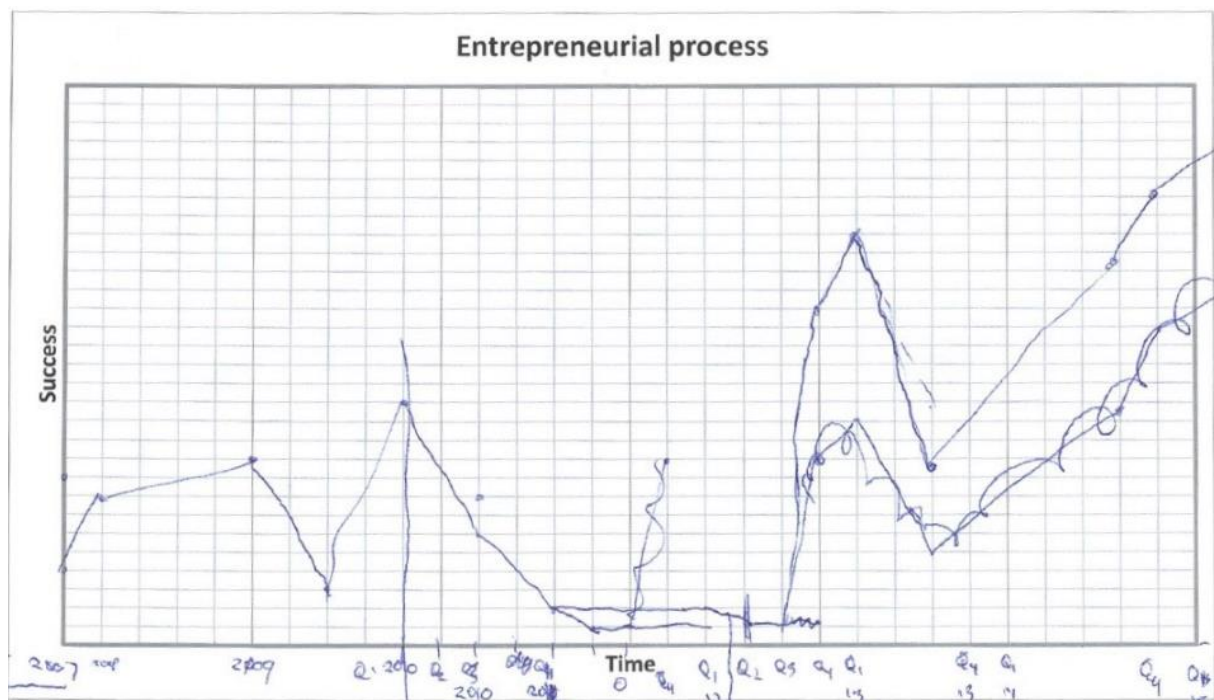


Figure 1. Graph entrepreneurial process Ein#1.

Historical contingency indicators

Several historical contingency indicators of Ein#1 are of international character. After graduating Ein#1 gets a job offer as independent consultant in Canada and is therefore basically invited to live there. This invitation can be seen as a kick-start for further international activities like a project in the Middle-East and future entrepreneurial activities. Ein#1 has started businesses in Ukraine and Russia as result of this international orientation. Events that have taken place and still takes place in these regions have both beneficial and negative effects on Ein#1's entrepreneurial process; the 2014 Euromaidan protests and the current tensions and vicissitudes in the Russian/Ukrainian region. Besides these international events, Ein#1 has faced a last moment partner cancel during his

entrepreneurial process. 5 days before the beginning of a project worth of 160.000 USD the deal is cancelled. This event has led to another international event; providing sailing lessons in Vietnam. Another event that has led to entrepreneurial activities is the situation of an employment contract that was not renewed. All of the above indicators are classified as 'event' indicators. The role of this events in Ein#1's entrepreneurial process is discussed in the following part personal contingency indicators as being related 'experiences'.

Personal contingency indicators

Ein#1 is part of the Euromaidan protests in Ukraine during the 2014 revolution. Being part of this event has stronger connected Ein#1 to the people of Ukraine and therefore has led to an increase in Ein#1's motivation to continue activities with his local entrepreneurial team. On the other hand, the current tensions and vicissitudes in the Russian/Ukrainian region has forced Ein#1 to set some of his entrepreneurial activities on hold, especially due to the direct negative influences on his team.

After the aforementioned last moment partner cancel Ein#1 is going through a rough time, which is stress related. In this period Ein#1 undergoes a strong personal development. During his time in Vietnam Ein#1 decides to open up more to his network when entrepreneurial activities are getting worse, *"the moment you are open up when things get worse you get much more help you need."* Another personal belief, *"care for your fellow human beings"*, he has inherited from his upbringing. This belief has caused that Ein#1 is active as a sustainable entrepreneur. Several experiences gained in corporate organizations has driven Ein#1 towards entrepreneurial activity as well. Despite the good pay check and interesting network, the bad experiences predominate, *"you are stuck and nobody does anything with your recommendations."* Another lesson Ein#1 has learned by experience was caused by wrongly chosen partners, *"at the moment it does not feel good, a deal or whatever, do not do it. I lost real money because of that."* Ein#1 has learned a lot as well while coaching other people, for example as personal development coach.

Next to the above 'experiences' indicators, Ein#1 has experienced a lot of personal contingency that can be attributed to the 'relationships' indicator. *"Yes this is something beautiful, I generally bring in my projects through my network. When you spread the word of your problems in rough times, you will get the likeability factor."* Several business opportunities and benefits are originated from his network. For example Ein#1 decides to share office space with another entrepreneur immediately after they met, *"it really was a coincidence that it coincided exactly."*

Several obsessions also played a significant role in Ein#1's entrepreneurial process. *"Since I was little I wanted to be an inventor, later this was called a mechanical engineer, I promised myself I only develop clean technologies."* Another obsession had caused Ein#1's aforementioned international scope, *"I really like differences in cultures."*

Interpretation interviewee

On a personal level, Ein#1 relates the concept of contingency with his personal belief that when he is nice to other people, other people return the favour in opportunities. More generally speaking, Ein#1 sees contingency as something external where you do not have any influence on. However, *"it is also choosing strategic risks, to be dependent on contingency as little as possible."* Sometimes contingency comes out of the blue, *"you think this is good and this we will do."* Ein#1 indicates that is too difficult to rank the role of contingency in his entrepreneurial process related to opportunity formation in a scale from 0-10

4.2 Narrative Ein#2

Contextual background interviewee

Ein#2 is co-founder of a startup that is active in the energy devices sector. The interviewee is sustainable entrepreneur since 2015, the same year the startup is founded. The startup's objective is to share battery power in a more efficient way, while stimulating social interaction. The startup has not signed a first employee beyond the firm's initial team. Therefore the current entrepreneurial phase can be categorized as startup phase. Examples of the entrepreneur's achievements are having a working prototype and being in contact with a possible launching customer. In the figure hereunder, the pattern of Ein#2's entrepreneurial process regarding success over time is displayed. This pattern can be used as guidance during the following entrepreneurial narrative.

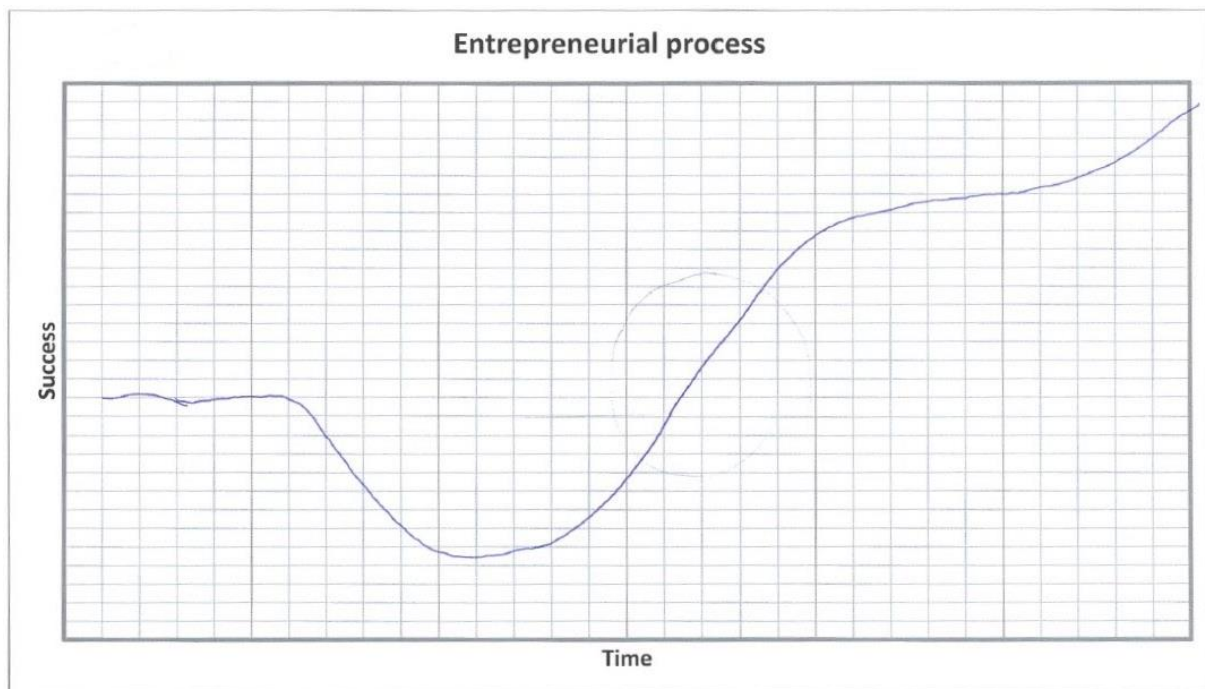


Figure 2. Graph entrepreneurial process Ein#2.

Historical contingency indicators

Ein#2 has not experienced an event that affected his entrepreneurial process. However, Ein#2 has seen it related to other entrepreneurs. For example, *"at an entrepreneurial contest, someone had a sick daughter and that's why he started his idea that's quite become a successful startup."*

Personal contingency indicators

Several indicators that can be attributed to 'experiences' has influenced Ein#2's entrepreneurial process. His experience as being part of a study association board was beneficial in his entrepreneurial process. Also his experiences with hitching all across Europe is beneficial for his ability to contact other people, which is beneficial for his entrepreneurial process as well. This hitching can be categorized as an 'obsessions' indicator as well. In addition, his study experiences has influenced Ein#2. *"My high school profile was the broadest possible. This has contributed to the fact that I actually find anything interesting". "You also follow guest lectures at the university, in which you come in contact with entrepreneurs."* Study aspects also play a role what can be attributed to the

'knowledge' indicator, *"the academic articles that you come in contact with, you learn the basics in the study but how things are done in practice you learn from your direct environment."*

This direct environment, in other words the 'relationships' indicator, has had a large impact on Ein#2's entrepreneurial process. Ein#2 was informed through a friend about an opportunity to contribute setting up a startup school in Valencia. This friend's manager at a large company was the initiator of the project, *"it's all quite a big coincidence from scratch, I did not know what to expect."* Fuelled by the entrepreneurial mind set through his network of the participating Spanish entrepreneurs, Ein#2 had decided to join the entrepreneurial programme as well. Ein#2's team was formed based on overlapping interests.

Several obsessions also played a significant role in Ein#2's sustainable entrepreneurial process. *"If you read something about a super alternative or sustainable business model that can make such a big impact with a very simple idea, that motivates me a lot."* Also Ein#2's internal drive to meet new people can be seen as an 'obsessions' indicator. *"My entrepreneurial drive comes partly from the drive to meet new people."*

Interpretation interviewee

According to Ein#2 unexpected events can have beneficial effect on the entrepreneurial team's motivation and energy, *"you can be invited to visit the mayor or someone else, these positive contingencies you can experience, just like winning an award."* The following view is on the 'relationships' indicator. *"Basically, the network around you is not a coincidence, because you have built that yourself. But what comes from it, that's quite a coincidence."* Ein#2 refers to the formation of the entrepreneurial opportunity, *"since my friend introduces me to that other guy, it was really unexpected, that's why I think contingency plays a significant role."* Therefore, Ein#2 ranked the role of contingency in his entrepreneurial process related to opportunity formation as a 7 in a scale from 0-10.

4.3 Narrative Ein#3

Contextual background interviewee

Ein#3 is founder of a startup that is active in the construction sector. The interviewee is sustainable entrepreneur since 2014, the same year the startup is founded. The startup's objective is to use current developments in the Internet of Things to make the construction sector more efficient and more sustainable. The startup has signed a first employee beyond the firm's initial team. Therefore the current entrepreneurial phase can be categorized as startup phase. Examples of the entrepreneur's achievements are having several customers and building an entrepreneurial community in the current office space the startup is seeded. In the figure hereunder, the pattern of Ein#3's entrepreneurial process regarding success over time is displayed. This pattern can be used as guidance during the following entrepreneurial narrative.

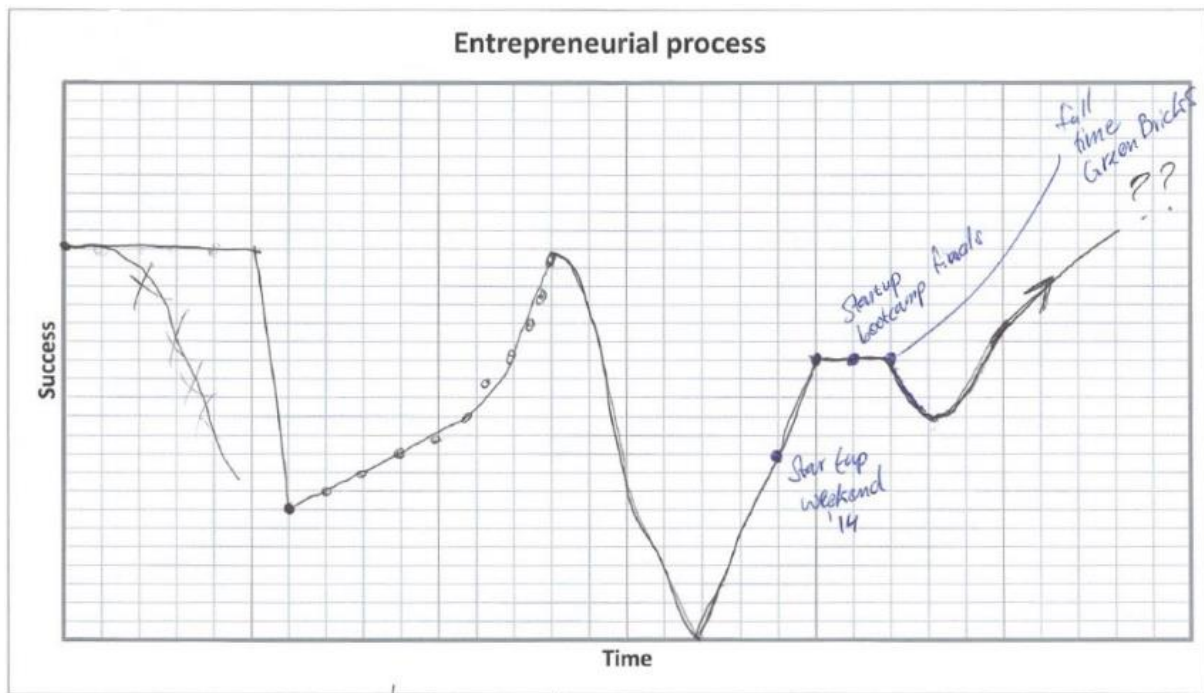


Figure 3. Graph entrepreneurial process Ein#3.

Historical contingency indicators

In Ein#3's pre-startup phase, several events took place that have accelerated or even started his later entrepreneurial process. An autodidactic international sailing trip from the Netherlands with Great-Britain as destination, an accelerator event named Startup weekend and the beginning and ending of the first steps in the corporate world are examples of these events.

In 2014, Ein#3 would actually go on a weekend city trip with his friends to Antwerp. However, with an entrepreneurial idea in mind, he is persuaded to join the entrepreneurial stimulating event Startup weekend that takes place the same weekend. *"I told my friends, if I do not get a good team by Friday night I still come to Antwerp."* After Ein#3's idea pitch, a team is naturally formed with people that like the idea and are willing to work on it the entire weekend. Final result is that Ein#3's startup in the making wins the event. Due to this victory they are invited to a follow up event that is named Startup boot camp, an important event in Ein#3's entrepreneurial process as well. *"If we had not won that Startup weekend event then I might have been active as business consultant in the corporate world."* According to Ein#3 the 2015 Paris climate agreement positively influences his entrepreneurial process as well. *"It is a confirmation that we are on the right track, this kind of events generate attention to our cause, indirectly open doors in make it or break it situations."* Ein#3's attached experiences with some of this 'events' are elaborated on in the personal contingency indicators part.

According to Ein#3, trends in society stimulate his entrepreneurial process as well. The lines between the Bay Area, with all the entrepreneurial developments, and the Netherlands are tight. *"Trends such as lean startup, permanent data experimental thinking, more testing, more in short time span; that whole culture of innovation. Awareness that the world is changing very fast and you need a different way to work. Suppose it is not going to work with my own company. I still trust that I have learned so*

much that I can help other companies to do these things. And with that in mind, I am willing to take much risk." This described trend is categorized as a 'trends' indicator.

Personal contingency indicators

Some of Ein#3's friends are into sailing. These friends have learned Ein#3 to sail, but an official training was never followed. At a given moment Ein#3 has decided to take measures in his own hands. This resulted in the aforementioned autodidactic international sailing trip without his sailing friends being around. *"That causes a buzz. If you aim for something and you believe in it, you can achieve something beautiful without the help of others. A bit against the current. Maybe I had never become an entrepreneur without sailing to Great-Britain, or I could have a negative experience."* In other words, this trip formed Ein#3's entrepreneurial spirit. Other experiences has contributed to this spirit and skills as well: being active in student committees, setting up a foundation which stimulates entrepreneurial activity among students and the aforementioned Startup weekend and Startup boot camp. The later has inspired Ein#3 to set up his own open source accelerator. A tipping point in Ein#3's entrepreneurial process was his first corporate job. *"I got less space to think what I believed in myself and how I wanted to do that. Visions clashed. So I resigned, cold turkey, no income."* After this, there were no excuses left for Ein#3 which prevents him to be an entrepreneur.

Next to the above 'experiences' indicators, Ein#3 has been inspired by people, which can be attributed to the 'relationships' indicator. During his high school, among his friends and family, *"because you see people who are successful in a way, I get the inclination to pursue that too."* In other words, it has stimulated his entrepreneurial process. Through the experiences of a current team member, Ein#3 has been inspired to set up his own open source accelerator. Ein#3 indicates that his network plays a role in the process as well, *"contingency plays a role how that happens via which and which person."*

"I had the dream to have a startup." Another indicator that can be described as an 'obsessions' indicator is sailing, which is also reflected in the next part about Ein#3's interpretation about contingency.

Interpretation interviewee

"During sailing you depend on external conditions to get anywhere. Just like being an entrepreneur. You just do not have any influence on your environment. You have to adapt all the time, but you can get to your destination, even if conditions change in the world. Sometimes you have to make a detour, but you can always get where you want." More specific Ein#3 believes that if one does something that really has one's interest, that you bump into contingencies earlier. *"I think there are a lot of contingencies, but the likelihood is even greater if it is in your nature to strive for it (entrepreneurship)."* Ein#3 sees the role of contingency in events like Startup weekend as a significant one, for example in winning the contest and in the team formation. Ein#3 indicates that is too difficult to rank the role of contingency in his entrepreneurial process related to opportunity formation in a scale from 0-10

4.4 Narrative Ein#4

Contextual background interviewee

Ein#4 is co-founder of a startup that is active in the collective energy sector. The interviewee is sustainable entrepreneur since 2011, the same year the startup is founded. The startup's objective is

to stimulate the use of collective sustainable energy and bring back power to the people. The startup has not signed a first employee beyond the firm's initial team. Therefore the current entrepreneurial phase can be categorized as startup phase. Examples of the entrepreneur's achievements are having collaborations with local governments and local sport clubs. In the figure hereunder, the pattern of Ein#4's entrepreneurial process regarding success over time is displayed. This pattern can be used as guidance during the following entrepreneurial narrative.

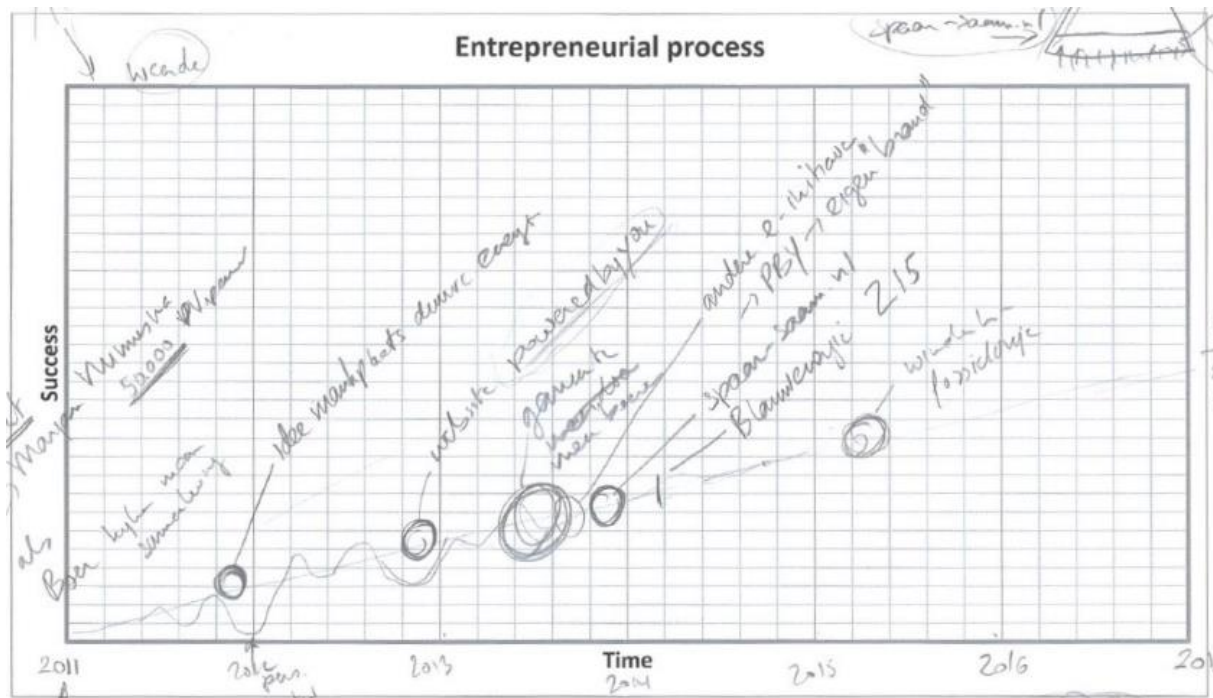


Figure 4. Graph entrepreneurial process Ein#4.

Historical contingency indicators

An event that have left a big mark on Ein#4 was the pregnancy of his wife who was pregnant with his daughter. During this pregnancy severe complications were noticed. The unborn's heartbeat was halved due to unknown reasons in a critical development stage, "so we took into account that our child would be seriously handicapped." Just like before, Ein#4's attached experience with this event is elaborated on in the personal contingency indicators part. In 2011, Urgenda director Marjan Minnesma bought 50.000 solar panels. Through a foundation she has sold these for 2/3rd of the price to Dutch people. Ein#4 wanted to have some of that panels and this event has inspired him to his first collateral sustainable activity, "I had approached the neighbours, one neighbour took part." Another, less tangible event that has influenced Ein#4's entrepreneurial process as well is the worldwide economic crisis, which approximately has arisen in 2008, as it has influenced Ein#4's work at his former employer negatively. "I thought okay, the business model of chasing bags of money is over. It's crisis, money is no longer there, no one has money, regional area development has stalled, there is simply no money." The resulting change in work procedures has caused a successive event, a labour dispute. All these events played a significant role in Ein#4's pre-startup phase. All these events eventually have led to the decision to start sustainable entrepreneurial activities, some through personal development, some through practical opportunities.

Personal contingency indicators

The severe pregnancy complications can be seen as an experience indicator that has facilitated a tipping point in Ein#4's world view despite the fact that Ein#4's daughter was born healthy, *"I am just a licensing authority, do things that I have learned but is it my passion? The answer was no. Do I have something to do in the world?"* The answer of this later question was being a sustainable entrepreneur. *"From that moment on, with the idea of possibly having a child that is not able to live independently, I could not live with the idea that I had not done something about climate change, while having knowledge about it."* Another 'experiences' indicator has pushed Ein#4 towards sustainable entrepreneurship too. The consequences of the economic crisis related to his expected tasks during his time as a public servant from 2008 until 2009 and disagreements on the way things were going in a consulting firm from 2010 until 2011 resulted twice in the aforementioned labour disputes. *"So there was a lack of confidence and I have had enough of it. Then I asked if they could fire me so I could apply for unemployment benefit and of this I could set up my own business, I made the prototype of that money."*

From his seventh to his twenty-fourth year of life every from March until October, Ein#4 has spent time with his family at a camping side in the forest, *"that has taught me the wonder of nature."* This yearly experience has led to an obsession that serves as a driver in Ein#4's entrepreneurial process, *"For me, nature is an incredible source of inspiration. I see a lot of potential in our society. Bringing together actors and bring it to fruition."* Another obsession is energy in general. *"Energy devices can give you freedom but also energy in people themselves."* Next to these 'experiences' and 'obsessions' indicators, Ein#4 was provided with 'skills' that is related to his family background and upbringing. *"My father worked at a factory in the technical department, my technical skills have something to do with that. Also I have studied mechanical engineering, just as my grandfather."*

Another important personal contingency indicator that has pushed Ein#4 to his entrepreneurial activities is found in the 'relationships' division. After a symposium in 2009 Ein#4 met with academic transition activist Jan Rotmans. During this short gathering Jan Rotmans invited Ein#4 to discuss his idea at a later moment. *"That meeting for me was a defining moment. At the end of the conversation he said that my idea was great and I should bring it into the world."*

Interpretation interviewee

"Only now I come to the conclusion that coincidence has a direction, it is co-incidence not against-incidence. If you take a look of the word's structure, something is co-evolving." From a more broad perspective, Ein#4 has another interpretation of contingency. *"I think there are regularities in contingency, but we do not recognize it as such. There are little processes which have to do with each other or reinforce and weaken each other. At that moment it really comes to you because you are do for it or it just need to be so."* However, Ein#4 sees contingency as being controllable in some way. *"It also has a lot to do with your will. If you lay around all day on the couch then you never gravitate contingency. And if you are aware of this process, you can play with it, in the positive sense of the word."* In other words, Ein#4 assumes that one can increase one's chances regarding contingencies. Ein#4 indicates that is too difficult to rank the role of contingency in his entrepreneurial process related to opportunity formation in a scale from 0-10.

4.5 Narrative Ein#5

Contextual background interviewee

Ein#5 is co-founder of a startup that is active in the hydropower sector. The interviewee is sustainable entrepreneur since 2013, the same year the startup is founded. The startup's core business is to develop simple hydropower technologies that provide economic benefits for small farmers in developing countries without hampering the environment. The startup has signed a first employee beyond the firm's initial team. Therefore the current entrepreneurial phase can be categorized as growth phase. Examples of the entrepreneur's achievements are having sold numerous products and having numerous partners. In the figure hereunder, the pattern of Ein#5's entrepreneurial process regarding success over time is displayed. This pattern can be used as guidance during the following entrepreneurial narrative.

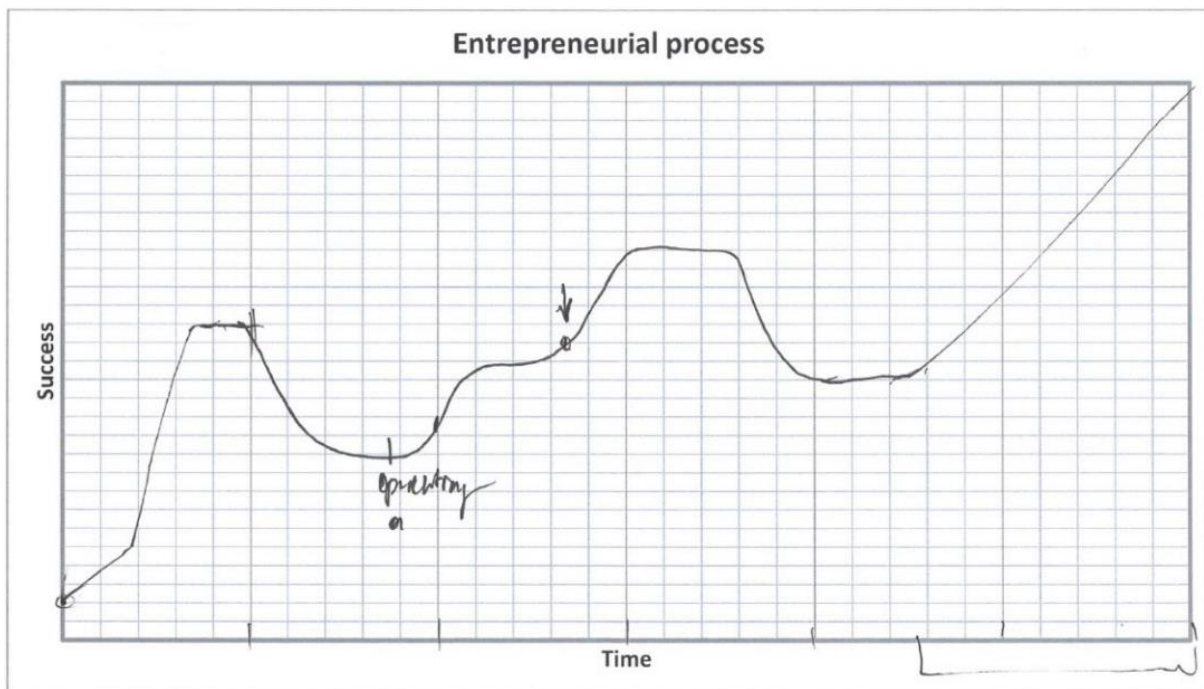


Figure 5. Graph entrepreneurial process Ein#5.

Historical contingency indicators

In Ein#5's entrepreneurial process several 'events' can be identified as influential. First off, the enterprise has emerged from a study project. Winning the Philips innovation award and BearingPoint award have stimulated and financed the startup in the beginning and can therefore be seen as events with a significant role in Ein#5's entrepreneurial process. Because the startup's initial focus and market area is Nepal, an event that has left a mark is the Nepal earth quake in 2015. At the same time, the borders between India and Nepal were closed for a half year. The reason for this was partly the earth quake but the foremost reason was a dispute between a Indian minority and the Nepalese government. *"That event, the earth quake itself and the redevelopment period has caused a delay of three months in delivering pumps that we sent in October. So that has delayed our plans in that sense."* However, this event has not only caused a negative impact on Ein#5's entrepreneurial process. *"Simultaneously we are dealing with a manufacturer who does things wrong. But because the blockade exists, the timeline to deliver is also stretched to such an extent that the manufacturer*

has plenty of time to put things right." In sum, the entrepreneurial process is affected both in a positive and negative way by the event indicator.

According to Ein#5, trends in society stimulate his entrepreneurial process as well. *"We have a product that has to do with water, renewable energy and agriculture. These are three items that have a lot of focus in our society. If you are like us on the interface of these three aspects, then you have a story that appeals to many. We have to do very little to attract attention."* The fact that the startup's business model is in line with societal focus points is therefore beneficial for Ein#5's entrepreneurial process.

Personal contingency indicators

For a study course Ein#5 needed to create a vision for himself and his future. This was in his pre-startup phase, with the idea of engaging in entrepreneurship already in mind. *"I want to use my knowledge and expertise to make a real impact somewhere."* A rather personal experience has led to a shift in Ein#5's way of thinking related to the big subjects of life. *"It was nothing serious but at a certain point by a certain thing, I got a realization and I was thinking about my role in the bigger picture. I started thinking about what I wanted to achieve as a person, as a designer and eventually as an entrepreneur."* Both experiences have influenced Ein#5's drive in life and more specific in entrepreneurship and therefore his entrepreneurial process.

Next to these 'experiences' indicators, a 'skills' indicator is identified. *"Through my education and upbringing I have become quite handy. I can make things, so in that sense it has helped us to make all our prototypes ourselves."* Also an 'obsessions' indicator is described by Ein#5 that has had an impact on the entrepreneurial process, *"furthermore I have a strange obsession with the law."*

"A lot depends on having and using your network." This quotation is a good representation of the impact of Ein#5's personal contingency 'relationships' indicators. These indicators have taken place in both Ein#5's pre-startup phase and entrepreneurial process. First the pre-startup phase is discussed. A year after the aforementioned realization of Ein#5's role in the bigger picture, in other words his entrepreneurial drive, he met a fellow student during a study course at Delft University. That student was aware that in Nepal, the country he originated from, farmers have problems related to land irrigation. This while there is a lot of water power available. Together with that student, now Ein#5's business partner, a solution for this problem was found during the study course and the seed of the startup was planted. *"So what is actually quite accidentally, I previously had some kind of vision developed for myself and I find someone by coincidence that fits into that vision without me having to search for it."* Besides these personal contingencies in the pre-startup phase, Ein#5 has experienced other 'relationships' indicators during his entrepreneurial activities. *"It all (entrepreneurial process) very depends on networking. If you know someone who can bring you into contact with something. For example, one of our business coaches is already friends for 20 years with a now secretary of state. Therefore he could arrange a meeting for us. These are things that come your way."* Also Ein#5's business partner's father, being a former secretary of state in Nepal, has opened doors in their entrepreneurial process. *"It was by chance that we have been able to use this in our advantage, it certainly was of great influence in the first two years."*

Interpretation interviewee

"In general, entrepreneurship is something that is very connected with chances. And consequently also connected to contingencies." Therefore, Ein#5 ranked the role of contingency in his

entrepreneurial process related to opportunity formation as a 7 or even an 8 in a scale from 0-10. “A lot of things could have happened differently in a sense that we would not be here otherwise.” Ein#5 especially noticed that contingency had played a significant impact at the start of his entrepreneurial process. In general, Ein#5 sees contingency as something that is happening to entrepreneurs without predictability. However, sometimes contingency could be influenced, can be something that can be controlled in a way, making it a steering event.

4.6 Narrative Ein#6

Contextual background interviewee

Ein#6 is co-founder of a startup that is active in the renewable energy sector. The interviewee is sustainable entrepreneur since 2006 and the current startup Ein#6 is involved in is founded in 2014. The startup’s core business is to turn unused remainders of energy called flex into a valuable source of income. These unused remainders are considered to be a bottle neck situation in the renewable energy sector. The startup has signed a first employee beyond the firm’s initial team. Therefore the current entrepreneurial phase can be categorized as growth phase. Examples of the entrepreneur’s achievements are partnerships with major energy companies and having numerous customers. In the figure hereunder, the pattern of Ein#6’s entrepreneurial process regarding success over time is displayed. This pattern can be used as guidance during the following entrepreneurial narrative.

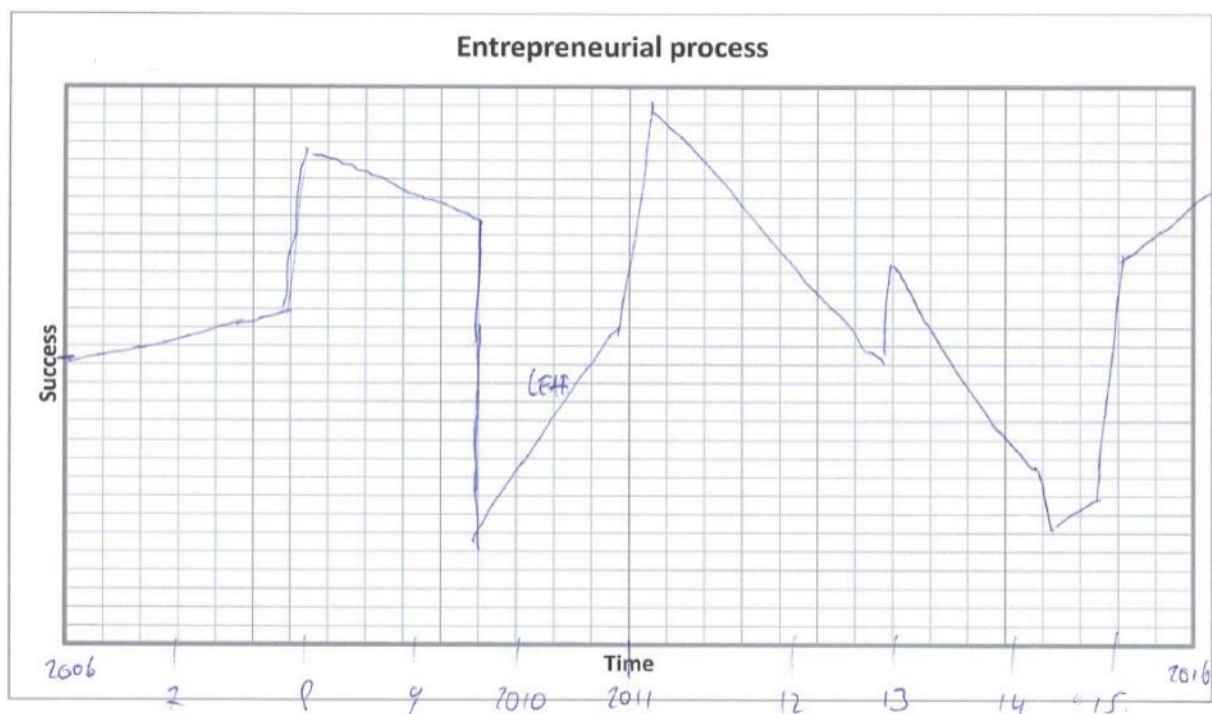


Figure 6. Graph entrepreneurial process Ein#6.

Historical contingency indicators

Ein#6’s terminal study project, which took place at a big corporate organization, was so well received that it was offered to continue it in employment. Ein#6 did like the sound of this opportunity and was in for it. At the same time, an entrepreneur who is looking for a business partner approaches Ein#6 and convinces Ein#6 to join the startup team, “you are the only one I know that fits the profile.” This event is identified as a defining moment that has started Ein#6’s entrepreneurial process. Next to

this event in Ein#6's pre-startup phase, several events that took place in his later entrepreneurial activities have influenced these activities. *"Right from the start we have received a lot of media exposure and we were able to bring in an investment from a green tech investor."* Ein#6 indicates that that investment have caused a wave of media exposure once again. Both events have contributed to the amount of success factor, both in terms of the outside world's perception and the internal processes. *"After that period, everything actually was not going very well."* The entrepreneurial team was the cause of this situation. The person who was important in bringing in the aforementioned investment started to become dysfunctional due to the company's growth and growing seriousness. *"This led to a situation wherein we did not achieve any of all targets, which forced our investor to enter a predefined arrangement into operation, whereby the investor took a majority in the company in exchange for a bridge loan."* A new CEO and CFO were added to the startup team.

The saved company's focus went from a fast-charger for mobile devices - *"the timing was just not right"* - to fast-chargers for forklift trucks and pale trucks. Another 'events' indicator was the cause for the last shift in focus, towards fast-chargers for automobiles. In 2009/2010 Japanese automobile manufacturers were developing fast loading cars, also for the European market. However, the complementary fast-chargers were not introduced in Europe due to the fact that these fast-chargers were produced by local Japanese companies that were not able to make the transition to the Europe market. *"That was an important opportunity. As techies we were worried, all we have built so far technology wise would be thrown overboard. However, when big car manufactures make the cross towards Europe, you know it is going to be a huge market."*

For Ein#6's startup this market was formed by another large complex international event, a tender for 200 fast-charging stations was put out by the Republic of Estonia. This tender originated once again in Japan. Due to an abundance of worldwide carbon credits, caused by a lack of industry, the Republic of Estonia sold its carbon credits to the Japanese company Mitsubishi. Mitsubishi stipulated as a condition that the received cash should be invested in electric automobiles and fast-chargers. The result, within two years 700 slow-chargers and 200 fast-chargers had to be built. *"Then a strange situation came into being. No company in the world had more than ten fast-chargers sold. To get more credibility and be able to scale-up, we were looking for investors."* Especially market participants related to this kind of installations were interested. *"In the end it turned out that we sold the company to a big market participant, knowing that the Estonian tender was a singularity, a unique event that was not a guarantee for a stable market after the scale-up."*

Being part of a large organization caused conflicts of interest and therefore had a negative influence on Ein#6's entrepreneurial process. The mother company was going through a rough time . Therefore a stop on hiring new employees was ordered, while new opportunities in bus fast-chargers required new employees for the intrapreneurial company. Ein#6's function as chief of new opportunities was therefore basically meaningless and Ein#6 aimed for a break-up. Ein#6's related 'experiences' are elaborated further on in the next part, personal contingency indicators. To avoid commotion Ein#6 was asked by the CEO to come up with an excuse for leaving, *"guys I want to start a new startup because I prefer the construction phase."* This lie backfires. *"My idea was that I wanted to take a half year off. What happened is that two other people from the company came to me, asked for my idea and indicated that they wanted to join my new startup."* The new startup is born with a focus in 3D printing, because Ein#6 already was experimenting with this technology as hobby. A

downside of this missed rest period is a burn out, which influences Ein#6's activities to the present day. *"The 3D printer gave too much whining. And upscaling was a problem. After 18 months, we pulled the plug. So we were a startup without a business plan. Usually a startup team then falls apart, but this did not happen. What now?"* The focus of Ein#6's startup team was again in the energy industry. They developed a strategy and vision of their ideal world energy wise. At the same time another initiative, the venture generator, with the goal of connecting corporate problems with startups, identified an opportunity at a large energy company. In other words, they had a business plan without a startup team. *"We developed the business plan further and afterwards the energy company invested in us."*

Ein#6 also named a 'trends' indicator that has influenced his entrepreneurial process positively. *"What we see is that large companies are trying to work with startups. It used to be that elephants were dancing alone with the elephants. Without this trend, we were not able to start our latest startup."*

Personal contingency indicators

An 'experiences' indicator in Ein#6's pre-startup phase is his educational career, which was not without sharp corners and edges. After four years of studying electrical engineering Ein#6 has switched to industrial design. *"Because I did not know what I should do otherwise. When this attempt almost hit a rock as well, I went looking for what exactly was blocking me."* This rocky road was important for Ein#6's personal development. Several of Ein#6's 'experiences' indicators are linked to aforementioned 'events' indicators.

When the aforementioned investor's condition was entered to get a bridging loan, Ein#6 related 'experiences' indicator is a negative one. *"At that time it was an absolute low. You have the feeling that you have not done it well. You lose control of your company, you get punished on the value of your shares enormously. That was a very important learning experience."* Another indicator is attached to Ein#6's time as intrapreneur after the startup was sold to the market participant. *"For me it is boring. My own experience of success was low. I was innovation manager, I terms of opportunity I had very little space."* This lack of space eventually caused the aforementioned burn out and therefore has a negative influence on Ein#6's entrepreneurial process.

A 'relationships' indicator was responsible for the start of Ein#6's entrepreneurial activities, the bridge between the pre-startup phase and startup phase. *"Among industrial designers, I was known as electro-crazy. The fact that my father was teaching an industrial design course in the electro engineering study program contributed to this status as well. The network largely originated by my father, because this guy who approached me to join his startup team was not someone who was active in my circle of acquaintances. That came together."* Another indicator was bringing in the first capital in 2008. *"Once again a club that you know through your network."* Also the venture generator that linked Ein#6's startup without a business plan to a corporate opportunity is related to the network. Also Ein#6 gets a lot of insights, opportunities and new information through his network, *"then someone sends something: hey is this interesting for you guys?"*

Ein#6's affection with 3D printing, which eventually leads to the core focus of his startup after the aforementioned lie, can be seen as an 'obsessions' indicator.

Interpretation interviewee

"I am in a startup environment. In this environment contingencies play a quite important role. You cannot force things towards an outcome. What you can do when an event occurs is to anticipate. A more specific statement on Ein#6's own entrepreneurial process related to contingency is "you actually see on the graph that there have been many contingency events." Ein#6 indicates that his startup's location, an incubator, is important in meeting opportunities and contingencies.

"Big ships aka large companies thrive on predictable winds, while startups aka little ships with adoptive teams thrive on crazy, unpredictable winds that are constantly changing. Tomorrow something can happen that causes the end for our startup. That is possible." Ein#6 indicates that the value that is built with the startup is just to ensure that the startup is less dependent on these unforeseen events. "While we are using the unforeseen opportunities. You look at what is happening in the world and you focus on how we can use it."

To conclude, Ein#6 ascribes a lot to the role of contingency in his entrepreneurial process. Therefore, Ein#6 ranked the role of contingency in his entrepreneurial process related to opportunity formation in a scale from 0-10 quite high. *"I would say a 10 but that is not the case because you have control. The determination of the vision is not a contingency. But having this vision makes sure you can use the contingencies in your favour."*

4.7 Narrative Ein#7

Contextual background interviewee

Ein#7 is co-founder of a startup that is active in the printing sector. The interviewee is sustainable entrepreneur since 2013, the same year the startup is founded. The startup's core business is to produce printers that print on any paper without using ink. The startup has not signed a first employee beyond the firm's initial team. Therefore the current entrepreneurial phase can be categorized as startup phase. Examples of the entrepreneur's achievements are having a working prototype and bringing in investments. In the figure hereunder, the pattern of Ein#7's entrepreneurial process regarding success over time is displayed. This pattern can be used as guidance during the following entrepreneurial narrative.

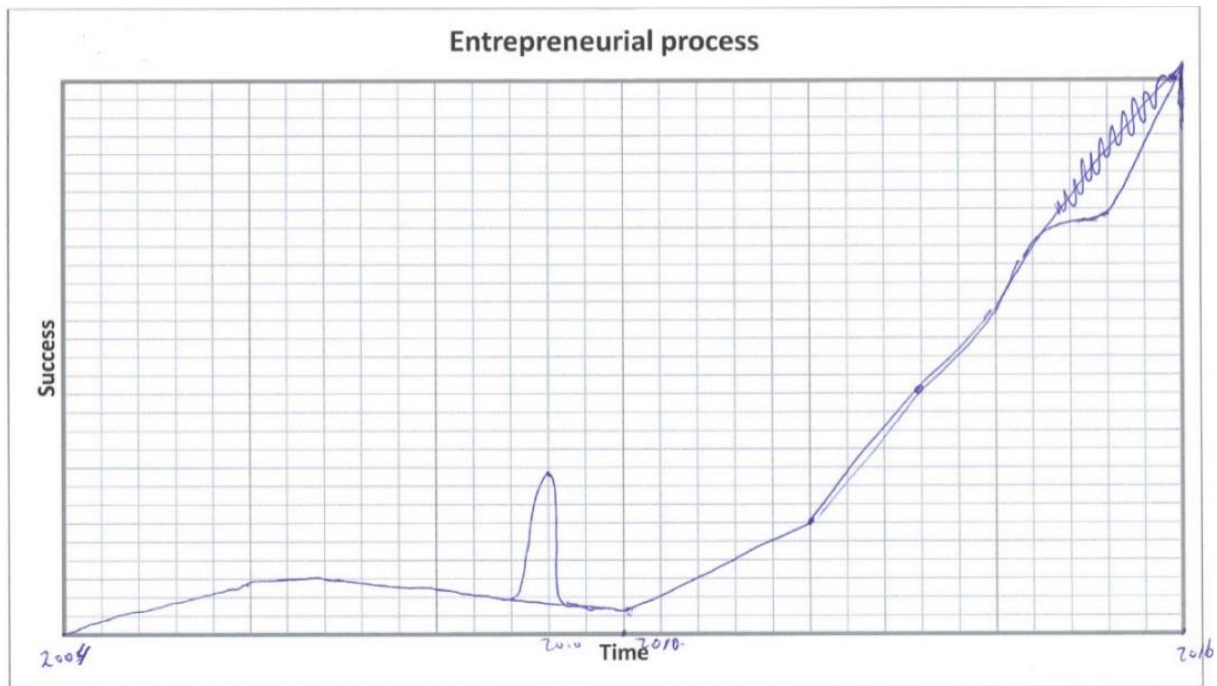


Figure 7. Graph entrepreneurial process Ein#7.

Historical contingency indicators

The attendance of the business economics class during high school in 2004 can be seen as an influential 'events' indicator that took place in Ein#7's pre-startup phase. *"Before that time I had no idea (what entrepreneurship was). Then for the first time you come in touch with entrepreneurship, think about it, consider it."* Traveling alone is an event that influenced Ein#7's pre-startup phase as well. The first steps towards entrepreneurship were his activities for a student discount card in Rotterdam and in Belgium. Especially Ein#7's activities in Belgium were quite similar to entrepreneurial activities.

The foundation for Ein#7's current startup was formed during a study course at the affiliated incubator of his university. *"You could only join the course if you had a startup team. I had an individual idea and my business partner to be had an individual idea as well. At the kick-off drinks you could pitch your idea and thereafter you would form teams. My business partner to be was there as well with a nice idea without a startup team."* The mandatory entrepreneurial team with Ein#7's partner's idea as core was formed and after the study course the new startup took part in the incubator's launch lab program to develop further. Some of these addressed 'events' indicators have related 'experiences' indicators that will be discussed in the next part.

Personal contingency indicators

An 'experiences' indicator in Ein#7's pre-startup phase is related to the attendance of the business economics class during high school. *"In that class there were some classmates who wanted to run a business. They all thought that it was all about having a specific skill. Then I already realized that someone just must grab the project by its balls and just do it. They totally did not realize that. They asked what is your added value in the team. Well, I make it happen, but they did not believe in this vision. This further developed my urge to prove myself as entrepreneur."* Another 'experiences' indicator is attached to the aforementioned traveling. *"I had thoughts like I do not exactly know what I want and I have to determine that myself. I have figured that out during that trip, and I said to*

myself if there is coming an entrepreneurial opportunity then I am going to grab this.” This entrepreneurial opportunity was the possibility to work for the aforementioned student discount card, which also resulted in attached ‘experiences’ indicators. “In Rotterdam I first experienced whether I liked sales and running an own business. Then we spread to Belgium, which was really like running an own business. I had to start from scratch. Building a company that existed in the Netherlands in a country where I knew no one. That was an entrepreneurial challenge within an existing company. That was a glorious time. Afterwards I knew that I wanted to become an entrepreneur.”

Another ‘experiences’ indicator is Ein#7’s educational career. Ein#7 first thought that the choice of study was not ideal. *“If you sit in the college-room and look around you and think this is not it, but I do not know what it is otherwise. And you know that other studies like economics and engineering are not fun either, then you automatically look further and think okay what is it that I do not like of this image of the future.”* Entrepreneurship proved to be the solution, *“since you have more individual freedom.”*

Another personal contingency indicator that has pushed Ein#7 to his entrepreneurial activities is found in the ‘relationships’ division. After traveling Ein#7 met somebody who Ein#7 knew from a previous job. They decided to have dinner together and the student discount card opportunity was proposed. Ein#7 has other remarks about his network as well. *“You can learn valuable lessons here (at the incubator). During drinks you can ask for things, I do think that must happen often, that is something I value a lot. The people you meet in your network are quite decisive for your success.”*

Interpretation interviewee

“In sum, there were quite a lot of factors that I myself controlled. There will always be a coincidence factor, however I think that the manipulability factor is relatively high. The difference between one person and the other person is that one person is able to decrease the coincidence factor more than the other person. So one person is able to perform these operations so that the coincidence factor is minimized and the factor on which that person has influence is being maximized. You can play with it.”

In other words, Ein#7 interpretation of the role of contingency in his entrepreneurial process is that contingency’s influence is relatively low. This is reflected in Ein#7’s the ranking from 0-10. *“Contingency can be a very important factor. I have no control about that extreme events like the Fukushima disaster. That type of event can wipe out all other factors and can destroy the whole process. However, I think that this area is little. I believe in manipulability. If we see it apart from the extreme events, I rank the role of contingency as a 1 out of 10.”*

4.8 Narrative Ein#8

Contextual background interviewee

Ein#8 is founder of a startup that is active in the solar panel sector. The interviewee is sustainable entrepreneur since 2009, the same year the startup is founded. The startup’s core business is to produce assembling systems that enables the use of solar panels on flat roofs. The startup has signed a first employee beyond the firm’s initial team. Therefore the current entrepreneurial phase can be categorized as growth phase. Examples of the entrepreneur’s achievements are having a product that is officially tested in a wind tunnel and having numerous customers. In the figure hereunder, the

pattern of Ein#8's entrepreneurial process regarding success over time is displayed. This pattern can be used as guidance during the following entrepreneurial narrative.

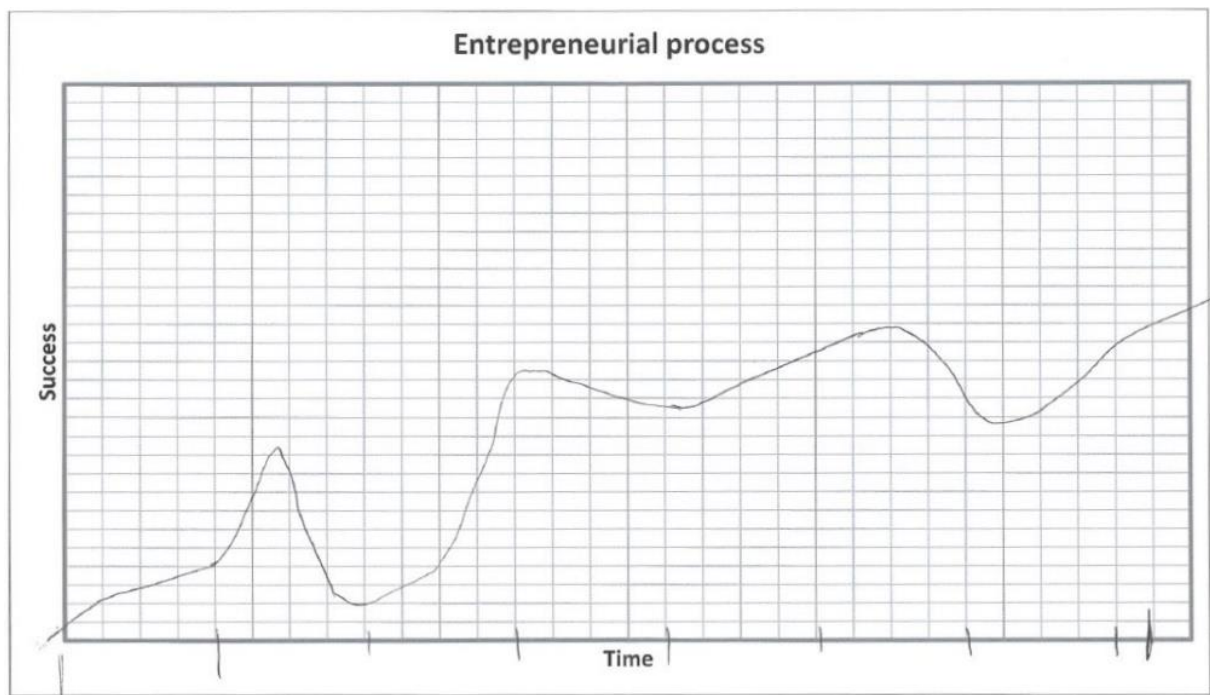


Figure 8. Graph entrepreneurial process Ein#8.

Historical contingency indicators

A quite practical and concrete 'events' indicator in Ein#8's pre-startup phase in his entrepreneurial process is the bankruptcy of his employer in 2009. *"Me and my business partner both worked at this big company in Utrecht. I arrived as employee number 80 and by the end, 10 years later 1400 people were with the organization. The company was very ambitious in renewable energy. Along with the ambition came the recklessness grew. In 2008 the credit crunch was there and the banks were increasingly reluctant to provide capital, while this was increasingly needed by the company. Too much risk was taken, the company had bitten more than they could chew and things fell apart. It is a contingency that the company went bankrupt, it was not my ambition to start for ourselves."*

After the bankruptcy Ein#8 was looking for a new job at an employer. However, applying for a job in that period of economic crisis was rough. *"So I was housebound for a while. To keep myself a little bit busy and we were still a bit of in business vibes, we went our bearings."* In that period Ein#8 and his business partner developed and tested a prototype of the idea that is still core of their startup nowadays, financed by their savings. However, starting and running a business with this prototype was not in Ein#8's mind yet. It was attempted to license it to an relevant market participant. *"We found that company that was potentially willing to pay for a license. They were seriously interested in taking the rights of the prototype over."*

During the negotiations with the company Ein#8 was paid to develop the prototype further at the facilities of the company. In addition, the intellectual property research done by the company had a positive outcome as well, the prototype seems to be unique and new. Then a few things happened simultaneously. *"It turned out that their organization was not suited for our prototype. The marketers were doing other things, it was syrupy, a not-invented-here attitude. In addition, they were*

undermining our idea. Parallel to us they were working around our patent and license, trying to figure out another system with the same purpose. Of course, we were very angry.” Consequently, the negotiations had collapsed and this ‘events’ indicator was the kick-start for Ein#8’s entrepreneurial process. *“If that company had acted somewhat smarter, if they slightly earlier had told us that it was a done deal, we already had decided in favour of the deal, then it had been of their. So because they hesitated to draw, we could pull the plug and start a business for ourselves with our prototype at an incubator.”*

All these ‘events’ indicators took place in Ein#8’s pre-startup phase, starting with the global credit crunch and ending with the negotiation deception. Other ‘events’ indicators that Ein#8 indicates that have or could influence his entrepreneurial activities are policies on subsidies, the Paris climate agreement established in 2015, governmental objectives, *“these are huge drivers.”* A more specific indicator is related to Ein#8’s largest customer, *“our largest customer came along when we had a stand at a fair.”*

The first ‘trends’ indicator that Ein#8 indicates is related to the aforementioned policies on subsidy. When the startup was made operational, the Belgium market was very favourable for the startups focus. This ended and because the Dutch market was evolving, due to the lowering prices in the industry, the startup was able to survive. The lowering of prices and other developments that take place at a societal level, is considered as a ‘trends’ indicator as well.

Personal contingency indicators

An ‘experiences’ indicator in Ein#8’s pre-startup phase is related to his work activities as industrial developer at his aforementioned employer. *“Sometimes we thought, darned, sometimes we thinks of things that are successful and we made no extra money. Or you developed something and then someone else within the company had to make in a success, but that did not happen. That rankled a bit occasionally.”* In his startup Ein#8 is in control of all these processes that lead to success, which is a motivation in his entrepreneurial process. A process Ein#8 still doubts about whether it is his destiny. *“I still do not know if we are thoroughbred entrepreneurs, we do or best with trial and error, it is pretty good. But I do not see entrepreneurship as a calling.”*

“As it turn out, if you run your own business, you are doing a lot yourselves, websites, texts, brochures, product development, e-mails, logistics, you need to be a jack-of-all-trades. As industrial developer this is already your nature to some degree.” Another ‘skills’ indicator that has influenced Ein#8’s entrepreneurial process positively is Ein#8’s graphic skill-set. *“I am computer savvy, making websites, graphic and movies. That is indeed a skill of mine and it turned out to be enormously useful being an entrepreneur. Taking beautiful pictures of the product.”*

A ‘relationships’ indicator was responsible for the needed capital necessary for the developing process of the prototype at the time that the startup just was seeded in the incubator. *“We need money to make it through the coming weeks we thought. At a party my business partner ran into someone with a certain fortune who was willing to help us out. What do you need? 50.000? That is fine. I you can repay the fund it is nice and otherwise it is okay either. That was great because we desperately needed the money for research activities.”*

Also the aforementioned bankruptcy ‘events’ indicator has caused a ‘relationships’ indicator as well. *“From our previous work environment we have created and kept a pretty big network in the*

renewable energy sector. Many of those people are still working in this sector. In the, at that time, booming market Belgium, a company was willing to work with us because they knew us from our former activities. So we actually had a launching customer, while we not even had a decent prototype. In general, it appears that we know a lot of people, a lot of colleagues. They are currently developing solar parks, project developers or potential customers. That is great, a really good network."

Interpretation interviewee

To conclude, Ein#8's interpretation of contingency. The following quotations are a reflection of Ein#8's interpretation. *"The bankruptcy was in retrospect a blessing in the skies. It was a contingency, we could not do anything about it and we did not like it. But if that not had happened we would still be settled there. Or we were still employed and we not had all this (the startup)."* Ein#8 indicates that is too difficult to rank the role of contingency in his entrepreneurial process related to opportunity formation in a scale from 0-10.

"The emergence of a home market, that is just luck. By the same token, it was not the case and it was collapsed (the startup). As a small playing figure in the market you cannot do anything about it. I think contingency plays a pretty important role and I think that you cannot plan it all. However, in the end I think we have done a lot on our own, just the quality of our product and our vision. But decisive things were indeed just coincidence."

In sum, Ein#8 sees contingency as something that is happening to actors without predictability. However, sometimes contingency could be influenced, can be something that can be controlled in a way.

4.9 Narrative Ein#9

Contextual background interviewee

Ein#9 is partner of a startup that is active in the oil cleaning sector. The interviewee is sustainable entrepreneur since 2013, the same year the startup is founded. The startup's core business is to develop nontoxic absorbent spray as a solution for oil spills, effectively clean surfaces. The startup has not signed a first employee beyond the firm's initial team. Therefore the current entrepreneurial phase can be categorized as startup phase. Examples of the entrepreneur's achievements are receiving a proof of concept and being accepted for the Climate-KIC accelerator program. In the figure hereunder, the pattern of Ein#9's entrepreneurial process regarding success over time is displayed. This pattern can be used as guidance during the following entrepreneurial narrative.

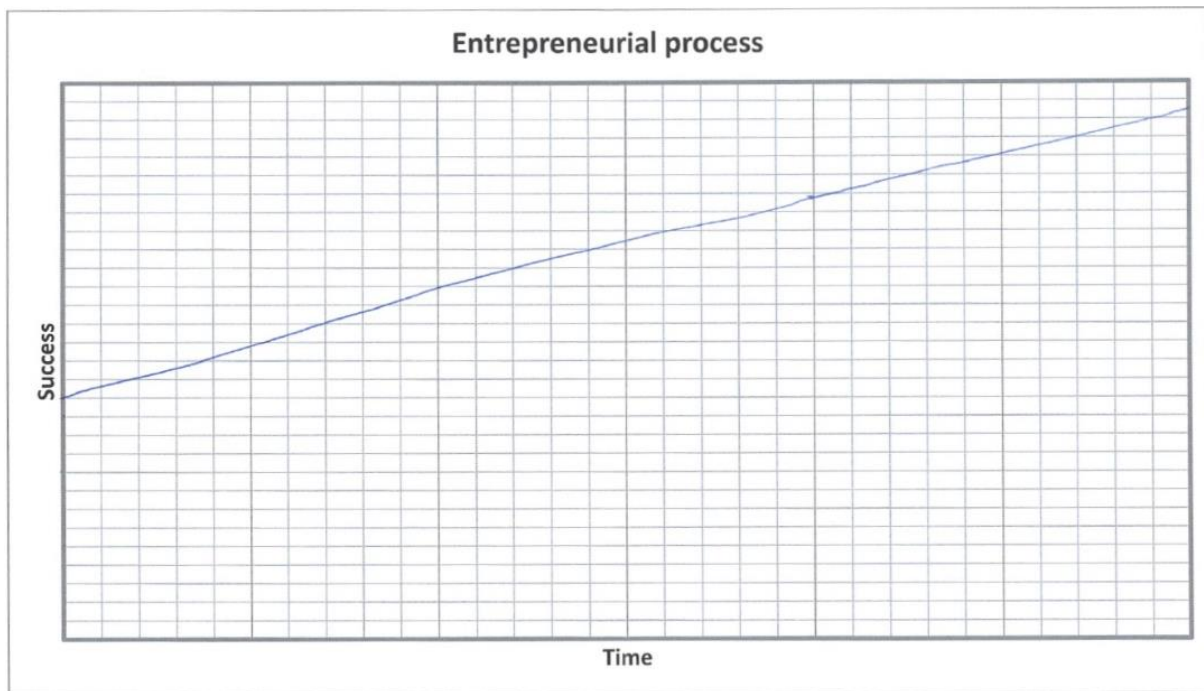


Figure 9. Graph entrepreneurial process Ein#9.

Historical contingency indicators

In Ein#9's pre-startup phase, Ein#9 turned down a well paid corporate contract that already was signed by both parties. *"At that moment I really cancelled the job. It was a big thing, you have to go to the Chamber of Commerce, no income."*

Ein#9 indicates that joining the incubator where his startup is seeded can be seen as another 'events' indicator that influenced his entrepreneurial process in a positive way. *"We were looking for money to get going. I know the financial world a little so I made some calls."* During this search for money and office space Ein#9 eventually found out about the incubator.

Ein#9's startup is in the oil spill business. Therefore, big oil spills are events that paradoxically offers opportunities in Ein#9's entrepreneurial process. *"It comes right on the news and then everyone is saying wow we should not have all those oiled birds and mammals that wash up dead on the beach. This has a positive effect."*

Ein#9's indicates a 'trends' factor that influenced his entrepreneurial process in a positive way as well. *"The hard business culture that the US has given us, I think it is done, it adds little. I understand that people want to be financially independent but that is not required with many billions. Sustainability is an important thing, also concerning the impact of business on the community. Those are things that also helps our process. We have a very likeable product."*

Personal contingency indicators

An 'events' indicator that has pushed Ein#9 towards his entrepreneurial activities is his corporate career. *"Large companies have a good and beautiful function. However, for someone with my background (engineer) and so much experience it is actually not satisfying. All along established lines with little room for manoeuvre. There are always people above you."* This indicator has played a

significant role in Ein#9's decision to cancel the aforementioned signed corporate contract and start entrepreneurial activities.

A 'relationships' indicator was responsible for the composition of the startup team. *"We met in Antwerp. A chain of events, a mutual friend introduced us to each other. It was actually a match making."* In addition, Ein#9 indicates that his solid relationship with his business partner is important for his entrepreneurial process. *"It clicks between us personally, so then you are much more forbearing and forgiving."* Ein#9 also emphasized on the importance of the support of his wife in his decision to become a sustainable entrepreneur, *"that does help, when your wife is not nagging."* More general, to grow Ein#9 considers self-reflection of paramount importance, both in business and personal development. *"You cannot come up with this with the mirror itself. Whether the reflection is coming from your job, your family, your customers or your business relations, I think it is important. However, you have to be open to it in order to receive it."*

Also an 'obsessions' indicator is described by Ein#9 that has had an impact on the entrepreneurial process. For Ein#9 the topic of pollution, the core focus of Ein#9's startup, always has been attractive. At his previous employer, Ein#9 was the first to buy a less polluting car. *"The company bought seven of them afterwards. If I was not there, then it had not happened."* This obsession with pollution is reflected back in Ein#9's habit during a forest walk. *"I always have a big bag with me, it sounds corny do not tell anyone, to throw all the stuff in that I discover. I hate to walk in the forest where a coke can is. When you see how much is thrown away, it is bizarre."* In sum, Ein#9's obsession for pollution and his entrepreneurial activities are strongly related.

Interpretation interviewee

Ein#9 believes that one can search for contingencies and consequently run into them as well. *"People are offered something, are not entirely happy with it and continue the search. One will do this and the other not. That is perhaps the contingency you are talking about. If you are not refractory to it, it will not happen."*

This view is reflected back when Ein#9 is asked to rank the role of contingency in his entrepreneurial process related to opportunity formation in a scale from 0-10. *"I think one is looking for contingencies, so I rank it somewhere below the 5. However, if you put it together than it does not need to come together necessarily. But one way or another it still gets together."*

4.10 Narrative Ein#10

Contextual background interviewee

Ein#10 is founder of a startup that is active in the solar panel sector. The interviewee is sustainable entrepreneur since 2011, the same year the startup is founded. The startup's core business is to develop embedded software for controlling sunlight and raising energy in the most optimal way. The startup has signed a first employee beyond the firm's initial team. Therefore the current entrepreneurial phase can be categorized as growth phase. Examples of the entrepreneur's achievements are having a development partner and having numerous projects done. In the figure hereunder, the pattern of Ein#10's entrepreneurial process regarding success over time is displayed. This pattern can be used as guidance during the following entrepreneurial narrative.

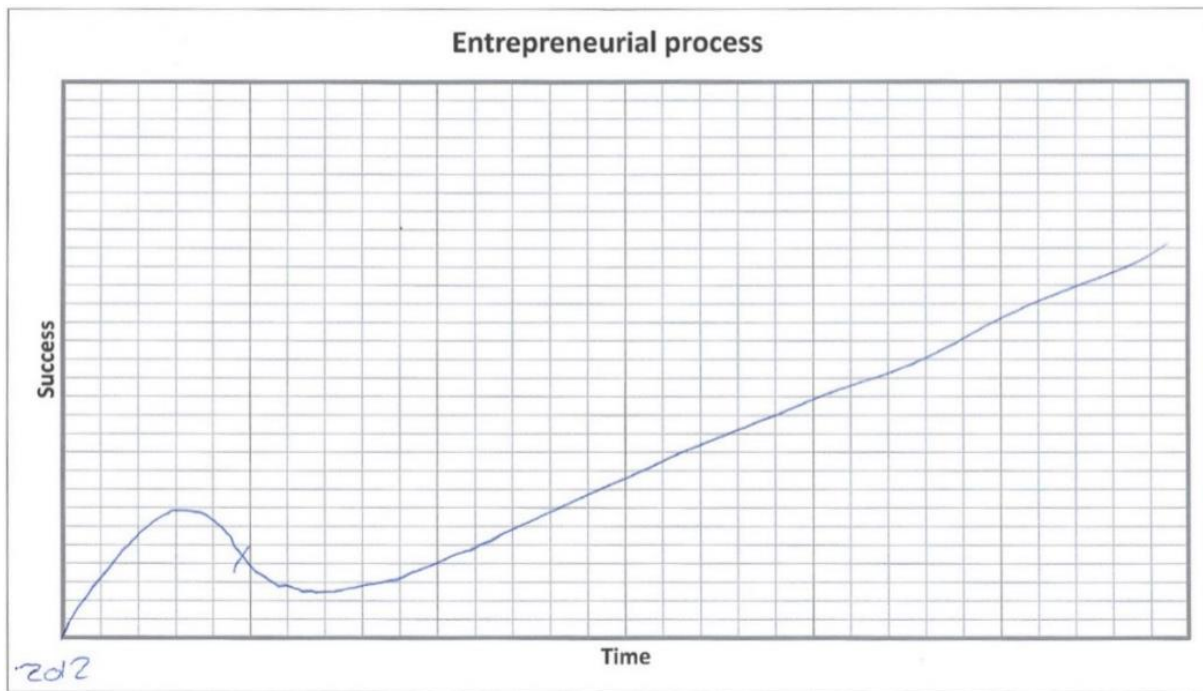


Figure 10. Graph entrepreneurial process Ein#10.

Historical contingency indicators

Ein#10's terminal study project formed the bridge between his pre-startup phase and his entrepreneurial activities. After graduating as an engineer at an engineering firm, Ein#10 continued and developed his project further at this firm as a freelancer. At a given moment the project was brought to a standstill and Ein#10 decided to set up a startup with his idea as core. *"The project was there, and I already worked on it for several years so I resumed the thread."*

Ein#10's second 'events' indicator is his search to an office space in order to develop a prototype which ended at the incubator where the startup is seeded at the moment of writing. Before this need of developing a prototype, Ein#10 is seeded in an anti-squat office space. *"And then you need to go somewhere where you can develop it (prototype). I was invited here (the incubator) in honour of a certain event, and then I thought this is a place where we need to be. Additionally I had just met Koen, that is my business partner, who studied in Delft and who lives in Rotterdam. So this is exactly in the middle."* Ein#10 indicates that it can be seen as a contingency that he was invited for the event at the incubator, before he had no clue what it was. Being seeded in the incubator has created opportunities in Ein#10's entrepreneurial process. *"The incubator draws in more and more opportunities. Our new team member came naturally to us because he wanted to do something with entrepreneurship instead of his corporate activities. If we had not been here that he had not even known us and a breath of fresh air had not been brought."* This breath of fresh air and its consequences is further elaborated on in the personal contingency indicators part.

Another 'events' indicator is the granting of a certain subsidy that enabled the founders to pay themselves, after a time a scarcity, which influenced the entrepreneurial process positively. *"You know you are building something but at the same time you have to have an income to live. It has to come from outside, or you have to sell, bring in an investment or another form of financing such as subsidy grants. It is a confirmation from the outside world that what you are doing is meaningful."*

Ein#10 indicates a 'trends' indicator that is influencing his entrepreneurial process in a positive way as well. *"On a societal level there is specific attention for sustainable entrepreneurship related innovation. Because of this, subsidy mechanisms are in operation from what we can live from. A large part of our existence is connected to these mechanisms, you can apply for grants from a fundamental development level. You can outline your whole project to commercialization."*

Personal contingency indicators

The father of a friend of Ein#10's girlfriend, *"so in my network but at a distance"*, can be seen as Ein#10 first informal investor, a kind of angel investor. *"During my graduation I had contact with him. He is in the greenhouse industry, and in terms of interest and discipline it was related to my terminal project. And that is how we started talking."* This 'relationships' indicator resulted in an 'experiences' indicator. *"That was cool for me. It also acts as motivation. Someone else place his trust in the product and is crazy enough to put money in."*

Another 'relationships' indicator that influenced the start of Ein#10's entrepreneurial process is Ein#10's father. *"I think my father has played an important role (in starting my business). He was working in solar energy all the time. He liked it and knows a lot about the topic. He read how the solar business worked in the Netherlands, in terms of politics, and had a strong opinion about it. He is an important reason why I am working in the solar business."*

After working alone for a while, Ein#10 was looking for a business partner. This succeeded by throwing out his network. Another indicator that has had a positive influence on the entrepreneurial process is the relation with a Radboud University professor, leading a group focusing on specific PV materials. *"I once get into conversation with this professor. That is just a really good guy who knows what is important for a startup. He is very pragmatic."*

The aforementioned breath of fresh air was necessary because the product became too complex. The new team member, who walked in the incubator with the idea of doing something in entrepreneurship, knew about a company that could solve the complexness of the product. *"It was one entity and therefore less complex. Consequently the concept was suddenly a lot more feasible. But that was something that was out of our reach, it was a coincidence that that one company was developing exactly that panel that is complementary with our product. At the moment we are trying to establish a cooperation with this company, but if they had not been there our concept would fizzled out."*

Interpretation interviewee

Ein#10 indicates that is hard to rank the role of contingency in his entrepreneurial process related to opportunity formation in a scale from 0-10. *"Contingency always plays a role. You can have luck with something. But still, in a certain way you have many things in control or you can steer it. Or somebody is looking for a solution and runs into you."*

To conclude, Ein#10's philosophical look on the subject, *"by nature one wants to deny coincidence."*

4.11 Narrative Ein#11

Contextual background interviewee

Ein#11 is co-founder of a startup that is active in the thermal sector. The interviewee is sustainable entrepreneur since 2014, the same year the startup is founded. The startup's core business is to

develop a solution to stabilize the district heating system by reducing the effect of daily demand variations, functioning as a thermal buffer. The startup has not signed a first employee beyond the firm's initial team. Therefore the current entrepreneurial phase can be categorized as startup phase. An examples of the entrepreneur's achievements is winning an international Climate-KIC entrepreneurial contest. In the figure hereunder, the pattern of Ein#11's entrepreneurial process regarding success over time is displayed. This pattern can be used as guidance during the following entrepreneurial narrative.

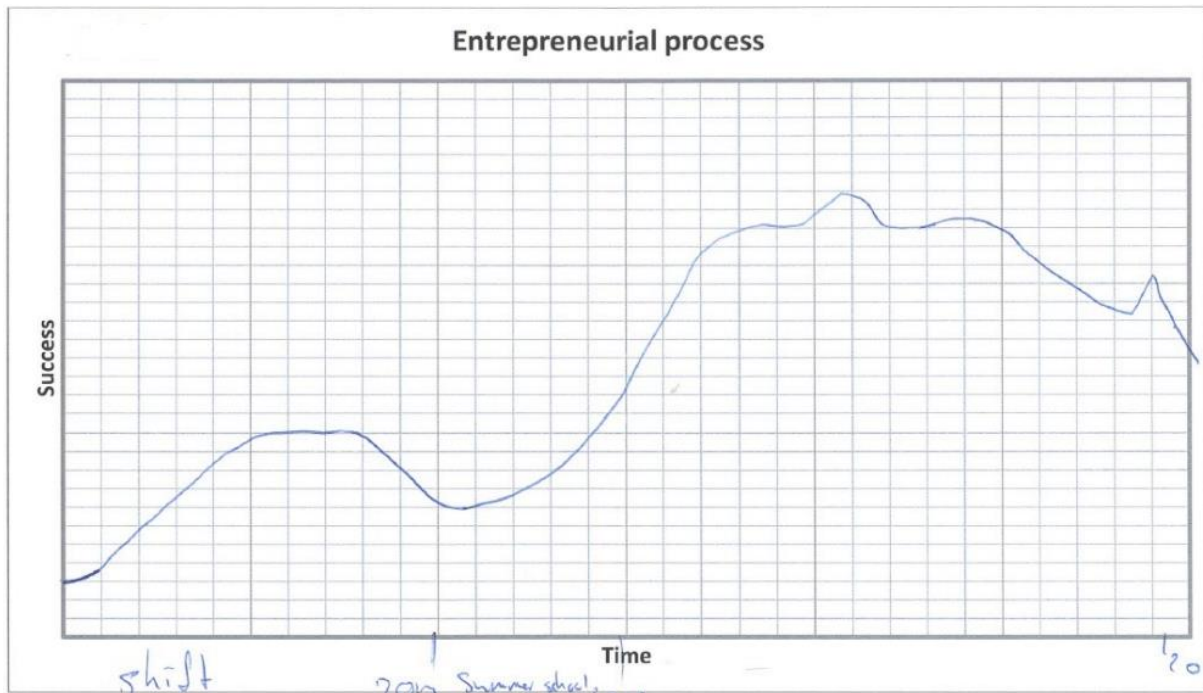


Figure 11. Graph entrepreneurial process Ein#11.

Historical contingency indicators

Ein#11 indicates that several 'events' indicators can be seen as successive stepping stones, which eventually have led to his entrepreneurial activities. The initial stepping stone is becoming part of a study association board in 2012. Being a board member resulted in an invitation to join a fraternity related to the same study association, the second indicator, which gave access to the third 'events' indicator. This third indicator is joining a student consultancy startup, which one can be only part of when one is a member of the aforementioned fraternity. In sum, two indicators in Ein#11's pre-startup phase have led to an opportunity to be active in a student startup. Attached 'experiences' indicators and other complementary personal contingency indicators regarding these 'events' indicators that have influenced Ein#11's entrepreneurial process are elaborated on later.

Ein#11 states that these three 'events' indicators combined have caused a certain personal entrepreneurial pathway that has ensured that he is aware of the Climate-KIC summer school study program. Joining this sustainable entrepreneurial study program, another 'events' indicator, eventually has led to the foundation of Ein#11's sustainable entrepreneurial activities. As it happens, after two weeks of attending the study program, the participants are forced to form an entrepreneurial startup team, "there are several people who have sustainable ideas, and then you are joining an idea that appeals to you. When speaking about coincidence, it felt coincidental that it

worked out pretty well when I joined the idea. Yes I knew what the idea was, but I had no idea what it was exactly.” An slow ‘events’ indicator in Sweden is at the basis of this entrepreneurial idea. In Sweden many district heating has converted to biomass heating. The idea solves the complementary challenges in the need for peak power that is accompanied with this transition towards biomass heating.

The entrepreneurial team consists of team members with different nationalities who are located in different places in Europe. To counteract this disadvantage in terms of teamwork, a Climate-KIC alumni startup contest in Valencia is used as an opportunity to meet. *“We wanted to go back to work with the team and we wanted to get together. And then the Valencia startup contest appeared. We thought we are going for it. Such an event can be used as a catalyst, it is not even about the event but about business rolling along again, resulting in an energy boost (in the entrepreneurial process).”* In the end Ein#11’s team won the contest, *“winning the contest gave another energy boost. You get the confirmation that it is a good idea and you should go along with it.”* In sum, Ein#11’s indicates the contest as an indicator that influenced the entrepreneurial process positively.

An ‘events’ indicator that influenced the entrepreneurial process negatively was the circumstance that the two key players in the team, two PhD candidates, arrived at the busiest time in obtaining their doctoral degree. This lack of time from their side was at the expense of the entrepreneurial process.

Ein#11’s indicates a ‘trends’ indicator that has influenced his entrepreneurial process in a positive way as well and describes it as an entrepreneurial vibe in the Netherlands. *“It encourages you to become an entrepreneur and sets you thinking about what is possible. This is a societal trend that you cannot really influence. We could also pick up money from Horizon 2020 and the University.”*

Personal contingency indicators

The first identified ‘experiences’ indicator is attached with Ein#11’s aforementioned involvement with the student consultancy startup. *“It has caused a mindset change, you do realize that you can do something, even as a student. Also it gives a bit of a foundation of entrepreneurship.”* Another ‘experiences’ indicator Ein#11 indicates is his stay in Berlin during his terminal study project. *“The whole entrepreneurial scene located in Berlin has provoked that entrepreneurship was flowing in my veins once again, yes this is cool!”*

Ein#11’s role as treasurer in the aforementioned study association board as described earlier, has enabled Ein#11 to develop financial ‘skills’ that were helpful in his entrepreneurial process. *“No one other than me in our team had feeling with the financial side of entrepreneurship. So it helped (financial skills), it gave a kick start to our business structure. That was great, otherwise our entrepreneurial process would have been less professional.”* Ein#11’s activities with the aforementioned student consultancy startup have resulted in a ‘knowledge’ indicator that influenced the process positively as well. *“For example writing business cases I had done earlier, that helped to lay the foundation of our own business case.”*

Several ‘relationships’ indicators have played a role in Ein#11’s entrepreneurial process, regarding opportunity formation and decision making. First of all, being with the student consultancy startup, Ein#11 met people that have inspired him. Second, Ein#11’s decision to join the aforementioned Climate-KIC study program was dependent on his relations with fellow students. *“Signing up for the*

study program has also been a group process. I was not alone. There were people I knew who had already done the program and people I knew who were signing in with me involved in decision making process to join the program. It was a kind of trigger. Several people who already had done the program were very enthusiastic, so I went for it as well. Peer feedback.” Third, his decision to join the idea during the program has been made on ‘relationships’ as well. “I actually choose the idea based on the people behind it. The idea was nice but I saw the potential in the people instinctively.” The final ‘relationships’ indicator that was indicated by Ein#11 is also related to the Climate-KIC study program. Because of his ties with the program, the director of the program was involved in his entrepreneurial process as well, “we have sparred with him several times, that was nice.”

Interpretation interviewee

To conclude, Ein11’s interpretation of contingency. The following quotations are a reflection of Ein#11’s interpretation. *“I think it is steered contingency. There are not a lot of truly random events. One follows the other, but the former one is necessary for the later one. Without Climate-KIC I had never started the startup. Without the board year I had never been involved in the student consultancy startup and I had never signed up for Climate-KIC.”* Ein#11 is asked to rank the role of contingency in his entrepreneurial process related to opportunity formation in a scale from 0-10, *“I rank it as a 7.”*

4.12 Narrative Ein#12

Contextual background interviewee

Ein#12 is founder of a startup that is active in the solar panel sector. The interviewee is sustainable entrepreneur since 2011, the same year the startup is founded. The startup’s core business is to decrease barriers for people who want to use sustainable energy by leasing out solar panels. The startup has signed a first employee beyond the firm’s initial team. Therefore the current entrepreneurial phase can be categorized as growth phase. Examples of the entrepreneur’s achievements are bringing in investments worth of millions of EUR and having numerous customers. In the figure hereunder, the pattern of Ein#12’s entrepreneurial process regarding success over time is displayed. This pattern can be used as guidance during the following entrepreneurial narrative.

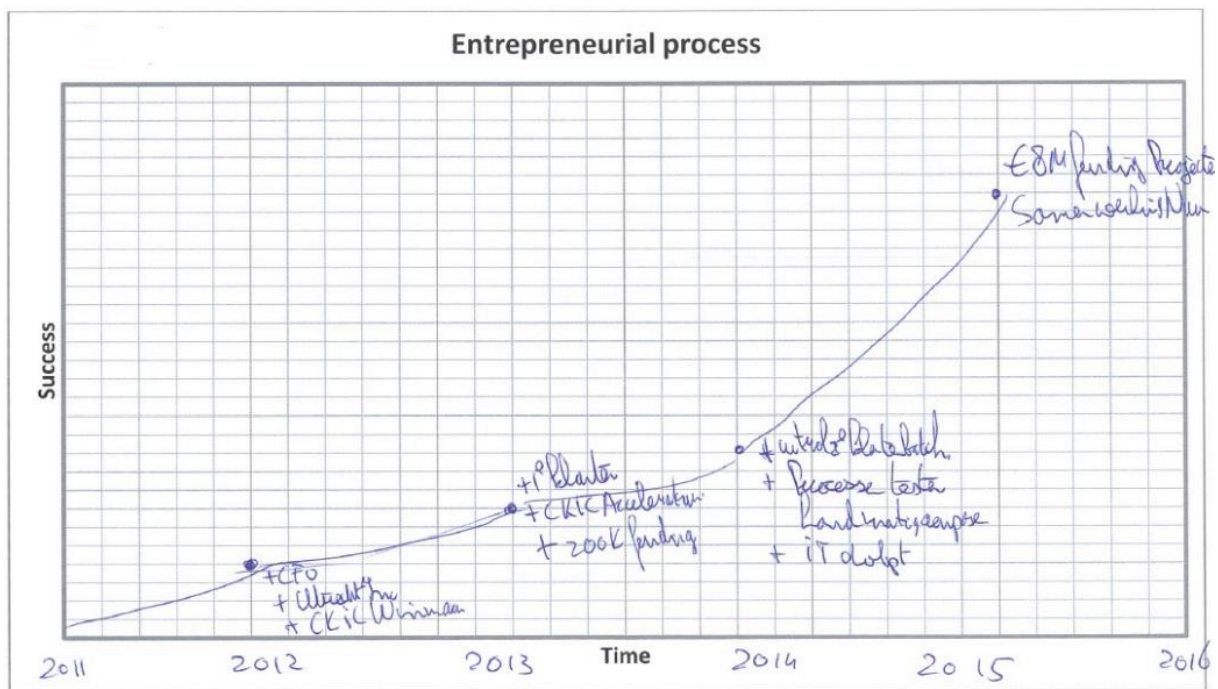


Figure 12. Graph entrepreneurial process Ein#12.

Historical contingency indicators

In Ein#12's pre-startup phase, Ein#12 was posted abroad to New Delhi, India in the role of commercial director of an automobile lease corporate, with the goal to make the company profitable after years of losses. This 'events' indicator has attached and caused several personal contingency indicators, which are described further on in the next part about personal contingency indicators. Therefore, this event has had a significant impact on Ein#12's entrepreneurial process. Besides this event that appeared in the pre-startup phase, Ein#12 indicates several 'events' indicators that happened during his entrepreneurial process that influenced this process positively. One of these is seeding in the UtrechtInc incubator. Other influential events were winning the 2012 Climate-KIC venture competition, getting the first launching customer and bringing in the first funding. The latter two 'events' indicators are discussed in more detail regarding the role of contingency and the influence in opportunity formation.

In 2013 Utrecht University was working on something new, namely the sustainability week. *"It is a fact that we have been lucky that Utrecht University was in the process of organizing such a week. They were looking for some suitable, practical activities to address the theme. It was the right moment, the right timing to ask them can you bring our product to the attention among your employees. And this happened. At that time, our biggest issue was not our product but the fact that no one knew about the possibility to lease solar panels, so it was very helpful."* Besides the resulting cash flow, the cooperation was also of value in a different way. *"Obviously it was great for us to be in the news with Utrecht University as a major customer. A great, reliable party, they exist 380 years. It is fantastic to roll out our innovative concept with such a partner."*

Bringing in the first funding also was all about timing and was exactly at the same time as getting the first launching customer. Energiefonds Utrecht, a fund based in Utrecht with the ambition to fund sustainable entrepreneurs and institutes, were about to launch themselves. *"They wanted to have*

three initiatives in their portfolio during their launch. We were in the running to be one of these initiatives. That was our first funding. Consequently, bringing in the following funding is easier due to the fact that someone already have invested in you and you are already on the market."

Ein#12 indicates a current entrepreneurial vibe as a 'trends' indicator that has influenced entrepreneurial processes in the Netherlands in a positive way, including his. *"There are many people with good ideas, but which trigger does one need to actually go for it. This vibe creates a self-fulfilling prophecy. When there is a lot of attention for sustainable entrepreneurship, when there is openness and budget for it, then it is just going to work, then you become an entrepreneur, then you get successful startups because you are in a fruitful environment. If you are a seed in the middle of a desert, you could never germinate. You cannot control this influence (as an entrepreneur)."*

Personal contingency indicators

As already mentioned, Ein#12's post abroad to India has several attached personal contingency indicators. The first can be categorized as an 'experiences' indicator and is related to Ein#12's sustainable entrepreneurial drive. *"I lived in New Delhi, the most polluted city in the world. A lot of poverty. I became a father for the first time over there, we got a son. So I started thinking how would I leave it (the earth) behind, and would I leave it behind better or worse than what I got myself. That is a personal motivation to become a sustainable entrepreneur. What role I am going to choose to achieve an improvement, that was not in politics or being active in a NGO, but being commercial and entrepreneurial."*

The second 'experiences' indicator has lowered Ein#12's personal barrier to become a sustainable entrepreneur and is also related to his stay in India. Ein#12 has experienced what it is like to be a relative millionaire when compared to the general poverty, having a beautiful expat apartment, having a car with driver, having a cook, having a nanny. *"Every day I was driven around by my driver with my new born son next to me and then you see a family of six children in the verge, next to the road. My son has been so lucky that he was born here and not born there. And every day you drive past the family and one day there are no six children but five. And viewed in this picture, was it a big risk for me to become an entrepreneur? Absolutely not, zero. I have a Dutch passport so that means I have a roof over my head, I have food to eat and my child can have access to good education. Becoming an entrepreneur was made easier because I have seen the other side for three years. That baby in the verge, what would it do if it had my opportunities? Certainly chasing his dreams! I might earn less, I might be frowned upon, I might drive a ten years old car, but is totally irrelevant. I have a Dutch passport. Then you are rich compared with five billion other people in the world."*

Another 'experiences' indicator has influenced Ein#12's entrepreneurial process by lowering Ein#12's risk averseness, *"because in fact everything I have now I think of it as a bonus."* Ein#12 is the son of a greengrocer and the family was short of money. Sometimes the gas and electricity bills were paid with the money Ein#12 earned with his newspaper round. *"Therefore the fact that I have been that fortunate to live in a country like the Netherlands, was able to study and thus initially was able to get a really good job, has always been a bonus for me on top of what my parents had. So to speak, at a young age I had so much more than my parents ever had. I think this had helped me to always have been free in my choices, it was not hard for me to limit my broader lifestyle."*

The last 'experiences' indicator has led to Ein#12's eureka moment, the idea that still is the core and foundation of his startup. In India Ein#12 came across a project on electric vehicles with the quest

how the entire value chain would evolve and what role the car lease corporate wanted to play in it. *"Then I thought, hey it is not only about the electric cars but it is also about leasing charging stations and perhaps leasing solar panels. I knew nothing about solar panels, I read up on the topic and I had my eureka moment."* To conclude, Ein#12 has used his experiences in the leasing business model to implement the same business model in another technological field.

Ein#12's study business administration is categorized as a 'knowledge' indicator. *"You learn all kinds of things. For me that was a very good basis for leading my company. I gained by my study program. I can read a contract because I have attended legal courses, the same applies for sociology, psychology and technical courses."*

Another personal contingency indicator that has influenced Ein#12's entrepreneurial activities is found in the 'relationships' division. *"After I had been for 15 years in a large corporate, I was at a point in conversation with someone from SnappCar, a startup active in car sharing. Through my network they contacted me and they said hey you have been in the lease industry, can you introduce us to others in your network? In the same conversation I explained what I was working on (the startup), and they replied that they were seeded in the UtrechtInc incubator. Have a look at that place, I think there is something in for you. So we went for it and it was a smart move. Our first customers came from the UtrechtInc network."* Another important network for Ein#12's startup is the Climate-KIC network. *"I accidentally came in contact with Climate-KIC because I interviewed someone from the county Utrecht, whether they would be a customer of ours. That deal was called off. However, they linked us to the new program they were developing, the Climate-KIC program, who are seeded now here as well (in the UtrechtInc incubator)."*

Interpretation interviewee

"Life is what happens to you when you plan other things" and *"I always say, besides that you need an entrepreneurial team, you need a sh*t load of luck"* are quotations that reflect Ein#12's interpretation of contingency in a proper way. Ein#12 is convinced that if people can let go the mind state that everything is controllable, people can be very happy. Nevertheless, Ein#12 regards contingency as being controllable in a way. *"Partly you must have good fortune, partly you can look out for it. You could say that you can force it."*

Ein#12 indicates the post abroad to India in his pre-startup phase that eventually has led to a change in world view and driver to become a sustainable entrepreneur as a high coincidence factor. The following quotation is about Ein#12's entrepreneurial activities and the role of contingency. *"As a startup you make something out of nothing. And the very first beginning is the hardest part. To get the first detent transposed is very difficult. The second one is difficult, the third one is becoming easier to get transposed. Especially for the first one you need a lot of luck. In other words, you can do a lot, but you need to have the fortune to get these first detents transposed somehow. In our process it was the case with Utrecht University as launching customer and our first funding by Energiefonds Utrecht. Just like coming in contact with Climate-KIC through my network. "*

This view is reflected back when Ein#12 is asked to rank the role of contingency in his entrepreneurial process related to opportunity formation in a scale from 0-10. *"When I think about it I arrive between the 7 and 8, thus 7.5."*

4.13 Narrative Ein#13

Contextual background interviewee

Ein#13 is founder of a startup that is active in the renewable energy sector. The interviewee is sustainable entrepreneur since 2010, the same year the startup is founded. The startup's core business is to develop optimal renewable power solutions for customers and business partners. The startup has signed a first employee beyond the firm's initial team. Therefore the current entrepreneurial phase can be categorized as growth phase. One example of the entrepreneur's achievements is having many employees in the United States of America. In the figure hereunder, the pattern of Ein#13's entrepreneurial process regarding success over time is displayed. This pattern can be used as guidance during the following entrepreneurial narrative.

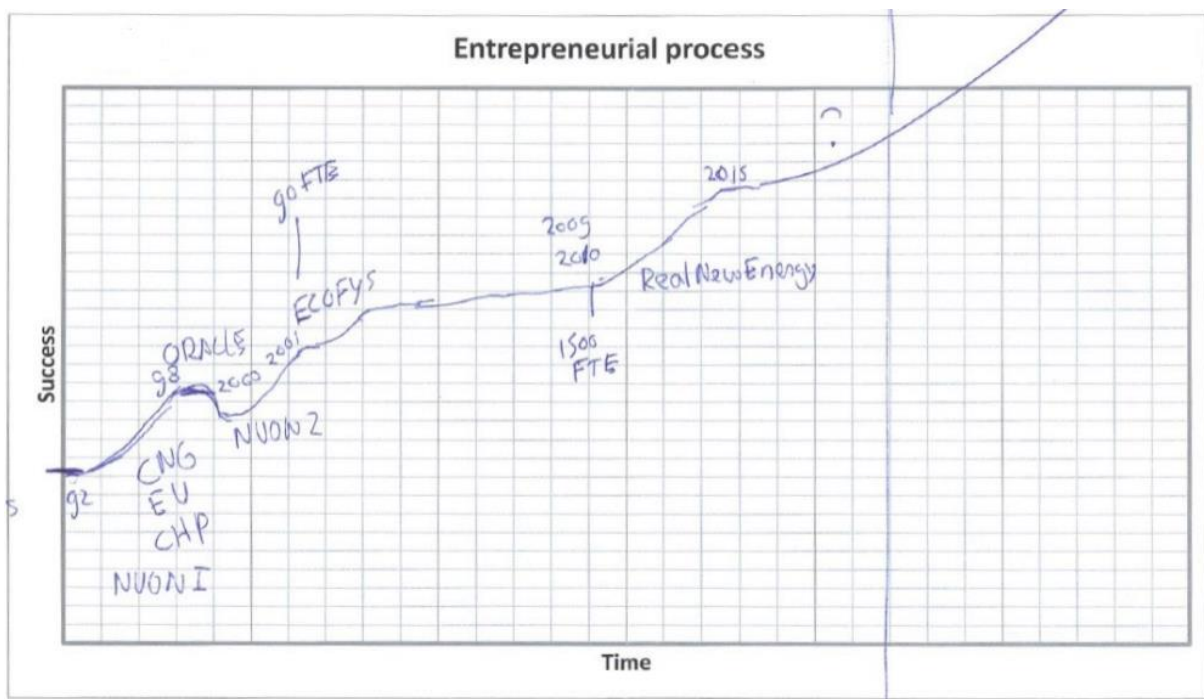


Figure 13. Graph entrepreneurial process Ein#13.

Historical contingency indicators

A major 'events' indicator was responsible for the kick start of Ein#13's entrepreneurial activities. In other words, Ein#13's transition from a pre-startup phase to a startup phase. His employer EcoFys, a large corporate with a focus on sustainability consultancy where Ein#13 was happily settled, went bankrupt. *"If it had not gone bankrupt, I was still seated there. I even had shares in the company."* During the bankruptcy, Ein#13 just returned from a post abroad in Italy. A post abroad to the United States of America was in the making. Consequently, this did not take place. However, the blueprint of the company's implementation plan was already developed. *"The plan was already developed, I met a partner and started a startup in Washington with the developed blueprint as core."*

Three 'events' indicators that have taken place in Ein#13's pre-startup phase have influenced his entrepreneurial process as well, especially by the attached experiences and knowledge indicators. First, Ein#13's first job at Energiebedrijf Amsterdam, later rebranded as Nuon. Second, Ein#13's job at Oracle as business consultant and the termination of these activities, *"Oracle stopped its business consulting activities, otherwise I would have been there for a longer period of time."* Third, Ein#13

joined Nuon for the second time after his activities with Oracle , which was a hectic period wherein Ein#13 became a whistleblower and exposed fraudulent practices. These 'events' indicators have attached and caused several personal contingency indicators, which are elaborated on in the next part about personal contingency indicators.

A 'trends' indicator that has influenced Ein#13's entrepreneurial process negatively has occurred during his aforementioned stay in the United States of America. In that specific society Ein#13 felt ill at ease. *"I found out, I think of America as..., I am still too much an European to live there. So I came back."*

Personal contingency indicators

As mentioned before, some of the stated 'events' indicators have several attached personal contingency indicators. During his first period with Nuon, Ein#13 has passed through a lot of projects. This 'experiences' indicator has helped Ein#13 in his latter entrepreneurial activities. *"The nice thing is that you will learn about responsibilities and that there is a general structure in projects. Even if you do not know the theory, money, knowledge, organization and time are important factors."* Exposing fraudulent practices during his second period with Nuon, another 'experiences' indicator, has led to a lesson and personal motto, *"if you do not dare, you will get less far."*

Two 'experiences' indicators are attached with his activities with and bankruptcy of EcoFys. The first one is about getting everybody involved in a process. *"EcoFys was originally a consulting firm. And those could not organize a piss-up in a brewery. You should also step into the shoes of the developer. You need to have at least a small share in a developer to be able to create a leverage for the consultant."* The second one is about learning from mistakes others have committed. *"Because you know the causes of the bankruptcy and you saw it coming, it also affects how you will do things later."* In other words, it has affected Ein#13's entrepreneurial process.

During his activities with Oracle, Ein#13 has learned a lot in IT. In addition, during his activities with EcoFys Ein#13 was challenged to learn more in physics. These two can be categorized as a 'knowledge indicator' and both influenced the entrepreneurial process positively.

Other personal contingency indicators that has influenced Ein#13's entrepreneurial activities can be categorized as 'relationships' indicators. *"In particular, and this also plays a part, my father was very ambitious, and that is not always easy. But I am sure that is why I developed an urge to prove myself."* Next to this developed personal driver throughout his whole life, Ein#13 indicates that in his opinion startups failures are for a significant part caused by issues between business partners. Besides, Ein#13 believes in the strength of relationships regarding the entrepreneurial process. *"Related to startups, I firmly believe in going out and get you one hundred talks, validate, falsify."*

Interpretation interviewee

Ein#13 is reserved about the role of contingency and indicates that is too difficult to rank the role of contingency in his entrepreneurial process related to opportunity formation in a scale from 0-10. *"It helps when you can find a good starting point or a good partner. But the remaining is just hard work and perseverance. In my experience, here just are hundred barriers between where you are and where you want to be. You should find this appealing (being an entrepreneur). You should get more energy from having setbacks than you let yourself put off by it."*

Ein#13 indicates the EcoFys bankruptcy as an important contingency for his entrepreneurial process. Also the fact that he is active in the energy sector is considered as a significant coincidence. “I studied economics and I started my career with an energy company, there is also a randomness factor in that. Because I could have started my career anywhere. It was not clear that I would go that path. If I could get a job at for example Unilever, I would have not refused that.”

4.14 Narrative Ein#14

Contextual background interviewee

Ein#14 has brought new life in an existing idea and is therefore director of a startup that is active in the fiber sector. The interviewee is entrepreneur since 2000, sustainable entrepreneur since 2013 and the current startup Ein#14 is involved in is founded in 2014. The startup’s core business is to produce fibers out of hemp to replace cotton, which causes environmental damage. The startup has not signed a first employee beyond the firm’s initial team. Therefore the current entrepreneurial phase can be categorized as startup phase. Examples of the entrepreneur’s achievements are receiving regional grants and having a Canadian development partner. In the figure hereunder, the pattern of Ein#14’s entrepreneurial process regarding success over time is displayed. This pattern can be used as guidance during the following entrepreneurial narrative.

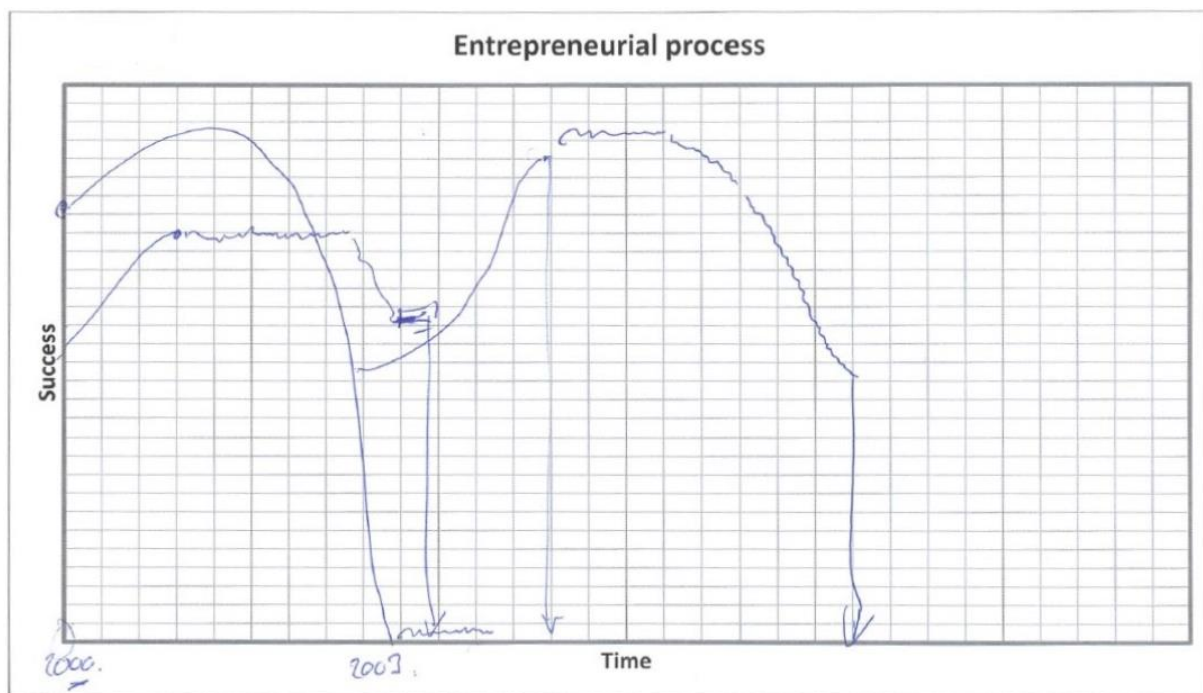


Figure 14. Graph entrepreneurial process Ein#14.

Historical contingency indicators

Ein#14 has not always been a sustainable entrepreneur. Before his sustainable entrepreneurial activities Ein#14 was active as a common entrepreneur with varying success. Over the years, Ein#14 has owned a barbershop, has owned a restaurant, has launched a liqueur in the Caribbean market and has set up an online business in Cuban cigars. Individually, these activities do not have necessary influenced Ein#14’s sustainable entrepreneurial process directly. Therefore, they are not recognized as ‘events’ indicators for his sustainable entrepreneurial process separately. However, this built up of former entrepreneurial activities together is categorized as an ‘events’ indicator, because the block

of activities take up a large part of Ein#14's professional carrier and eventually has led to his sustainable entrepreneurial activities.

The immediate cause of his entrepreneurial activities was his compulsory redundancy at a company in 1999, which is categorized as an 'events' indicator as well. *"I was thrown out because the new owner wanted to be the boss."* This dismissal was the beginning of the aforementioned block of activities. The end of this block is marked by a severe depression-like state for a year, caused by an entrepreneurial failure in 2011. *"I had nothing left. Then the situation occurs that you do not open letters anymore. When I escaped that situation I went to the tax office and confessed everything. I could only explain that I have lost my business, I have had no addiction, I have just only lost my business. My administration is a big box of junk and I cannot solve it. The gentlemen said I believe you, so he was not a bit of a nuisance. After he had discussed it with his colleagues, He put all meters to zero and suddenly all my problems were vanished into thin air."* This 'events' indicator has influenced Ein#14's further sustainable process positively. Ein#14 could start all over with a clean sheet.

This new start is characterized by Ein#14's first activity as sustainable entrepreneur. *"We got back to work with the solar heater. A friend of mine who lives in Malta saw all these solar heaters and thought, I can do that much better. So we made a prototype and the thing worked, which gives euphoria. However, finding technical partners to produce those things was difficult. In Malta you could not find them anyway."* Consequently, the project petered out like a damp squib.

The idea on which Ein#14's current startup is based, Ein#14 came across with when studying the topic of sustainable entrepreneurship in the course of 2013. *"I came across the project when I was reading up in the green sector. I discovered that two men were working on it and it stopped moving. I could tell by the outdated website and press releases. It appeared that they just had cancelled out the official business in the register. Then I asked whether I could take it, whereupon we made a deal. The holder of the knowledge would remain involved with the project from a distance and the agreement was formalized."*

Other 'events' indicators that influenced Ein#14's entrepreneurial process positively were joining the Climate-KIC program in Delft, bringing in a funding backed by the province in 2014 and receiving a subsidy by the province.

Ein#14's indicates a 'trends' indicator that has influenced his entrepreneurial process in a positive way as well and describes it as an entrepreneurial vibe in the Netherlands. *"It offers opportunities, it is a train that you jumped on, and it is just continuing to drive. Bringing in grants is easier, everyone is enthusiastic."*

Personal contingency indicators

The first two 'relationships' indicators are related to family. *"I grew up in a family of entrepreneurs. Entrepreneurship always was the talk of the town and you learn a lot."* The second one is family being served as safety net, which positively influenced Ein#14's entrepreneurial process. *"Why I can afford to occasionally fall flat on my face? If I really slip, I have a safety net, with this thought in mind, I can take more risks."*

Another 'relationships' indicator originated during Ein#14's student days in Groningen. *"The network which has grown during these days has been very important. Even if you have lost contact with each other, even if you have not spoken to someone for 30 years, you can send an e-mail and you will always get an answer. If I need anything or need to know something, I always know who to call."*

Ein#14 is seeded in the Greenhouse incubator. Ein#14 knows the Greenhouse by the aforementioned entrepreneur that worked with the startup idea before. *"That proved to be a hit. The little networks that came into being here, which really helps. People are connected here. Even with the grants regulations, province counsels are walking around here. Also in the technical dimension. Currently I am working with a Canadian party regarding a certain technique. Another startup pointed that opportunity out to me."*

Interpretation interviewee

Ein#14 indicates that is too difficult to rank the role of contingency in his entrepreneurial process related to opportunity formation in a scale from 0-10. Nevertheless, Ein#14 suggest that the role of contingency related to opportunity formation and success can be significant. *"One thing is for sure, if you ever will be successful or if you ever be screwed, it can both be caused by coincidence. So it can have a huge impact, but it is not foreseeable."*

4.15 Narrative Ein#15

Contextual background interviewee

Ein#15 is founder of a startup that is active in the hydropower sector. The interviewee is sustainable entrepreneur since 2009, the same year the startup is founded. The startup's core business is to develop a simple, but highly efficient hydropower station which will generate a profitable capacity of renewable energy in slow flowing rivers. The startup has not signed a first employee beyond the firm's initial team. Therefore the current entrepreneurial phase can be categorized as startup phase. Examples of the entrepreneur's achievements are receiving several proof of concepts and having several development partners. In the figure hereunder, the pattern of Ein#15's entrepreneurial process regarding success over time is displayed. This pattern can be used as guidance during the following entrepreneurial narrative.

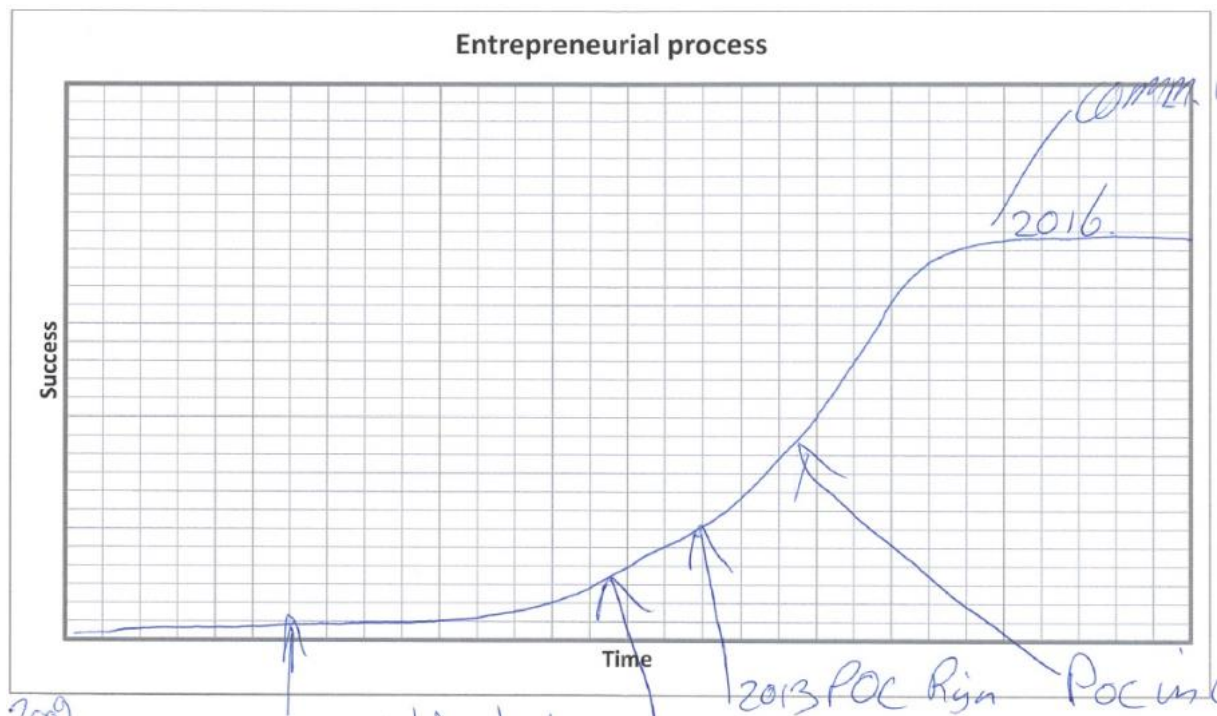


Figure 15. Graph entrepreneurial process Ein#15.

Historical contingency indicators

A significant 'events' indicator was responsible for the kick start of Ein#15's entrepreneurial activities. In other words, Ein#15's transition from a pre-startup phase to a startup phase. After 37 years being active in the corporate world, Ein#15 is dismissed. After a two months break Ein#15 decides to put his longtime hydropower idea into a working prototype.

Other crucial 'events' indicators which have ensured the continuation of Ein#15's entrepreneurial process are the prototype tests and eventually the proof of concept. *"In 2011 I had my first prototype test without knowing what it would do. And I told myself, if the test results in a positive outcome, then I know doing well and a continuation of the project is within the bounds of possibility. In 2012 the second prototype test, in 2013 the proof of concept in the Rhine, followed by a proof of concept behind forced water in Uft."* After developing the first prototype, Ein#15 is rejected by several national innovation stimulating programs. At the last rejection, Ein#15 is advised to search in a more regional direction. Exact that day, Ein#15 comes across a regional stimulating program in the newspaper and decides to register. Within two weeks, a presentation is held and the prototype is positively evaluated by a commission. The one person in the commission that is most critical of the prototype, still is involved with the project, as certification specialist. *"He had adopted a critical attitude towards the prototype. That was my cue that it (the project) was not a one-legged race."*

Three international 'events' indicators that took place in both Suriname and Sierra Leone have influenced Ein#15's entrepreneurial process negatively. How Ein#15 was able to have entrepreneurial activities in these countries is discussed in the personal contingency part. In Suriname, a Russian company already attempted to implement a hydropower technology, which turned out to be an utterly failure. *"Then you already are 1-0 behind, bad press had a bad influence."* The second indicator is that Suriname suddenly was on its last legs due to political instability, *"which*

still is a problem.” The third international indicator that affected the process negatively is the Ebola outbreak in 2014. It put on hold all of Ein#15’s activities. The back to grow program, which embarks the redevelopment of Ebola areas and is supported by the Dutch government, provides light at the end of the tunnel. *“Now there is a related investment for our technique”.*

Another policy ‘events’ indicator has influenced Ein#15’s positively as well. *“From 2015 new European legislation is in force, allowing countries to only have a fish mortality of 0.1 percent regarding hydropower installations. The current rate in the Netherlands is 30 percent. The current installations are meat mincers. We have a fish mortality of 0 percent.”* Therefore, an urge to replace the current installations exists and is providing opportunities.

According to Ein#15, a ‘trends’ indicator is influencing opportunity formation as well. *“We are sought and we are found. There is a lot aversion to wind power caused by the complementary visual pollution, which is an advantage for us. This aversion of wind power can contribute to our process.”*

Personal contingency indicators

Ein#15’s aforementioned role as project manager in corporate world, has enabled Ein#15 to develop related ‘skills’, *“I am familiar with the aspects of project management, reboot, retrieval and dealing with failure.”*

The ‘relationships’ inside the incubator where Ein#15 is seeded, have influenced the entrepreneurial process positively. *“You got a group of starting entrepreneurs. These people are holding a mirror up to each other’s faces. This and that is happened to me, people that are buggered around. You pick the out the good stuff.”* Ein#15’s business partner owns a motor company. This indicator is two-sided in terms of relationships. The first side, through the aforementioned incubator network, which consists of 200 partner companies, Ein#15 met his business partner because his motor company is one of the 200 partner companies and Ein#15 at one moment came over for advice. The other side is regarding Ein#15 business partner’s suppliers. *“He has built things for the cost rice, contacts with suppliers he already had, and the money comes later. No cure, no pay.”* This obviously has had a positive impact for the entrepreneurial process. To conclude this part about ‘relationships’ indicators, the emergence of the aforementioned international opportunity are discussed. *“In Suriname, a former associate of Nuon, who is retired now, is hugely interested in our technology and was already working with hydropower. He had a contact that he no longer could work with because that contact went bankrupt. So at one point he stood in my business partner’s workshop and wanted to talk to us.”* The opportunity in Sierra Leone also breezed in. *“At one point I get called by a Dutchman who lives in Sierra Leone, a retired military man. He was stationed in Sierra Leone, stayed there and stated a palm oil plantation. He also had a water plant that provided energy for his own and for his neighbours. He was interested in our technology.”*

An obsession has played a key role in Ein#15’s sustainable entrepreneurial process. *“I have a huge passion for water. I always had. I have to live near to the water, I have to be near to water. I have always been greatly inspired by water. Since I could walk, I was in water and ear to water. I lived by the sea, was born in Velsennoord. My father was a dock worker, always boats. That is in fact the foundation of everything, passion for water.”*

Interpretation interviewee

Ein#15 indicates that it is too difficult to rank the role of contingency in his entrepreneurial process related to opportunity formation in a scale from 0-10 and has a neutral attitude toward this role of contingency. Ein#15 indicates that the earlier described newspaper revelation, about a regional stimulating program, was influential and happened by coincidence. However, Ein#15 is confident that he would be in a similar position when that would not have happened. *“I would have been in a similar position but would have achieved that in a different way, and maybe have different contact, but that is always the case.”*

4.16 Narrative Ein#16

Contextual background interviewee

Ein#16 is founder of a startup that is active in the thermal sector. The interviewee is sustainable entrepreneur since 2014, the same year the startup is founded. The startup's core business is to warm people in a comfortable and energy-efficient way by producing heating pillows. The startup has signed a first employee beyond the firm's initial team. Therefore the current entrepreneurial phase can be categorized as growth phase. Examples of the entrepreneur's achievements are having a pitch on national television and having numerous customers. In the figure hereunder, the pattern of Ein#16's entrepreneurial process regarding success over time is displayed. This pattern can be used as guidance during the following entrepreneurial narrative.

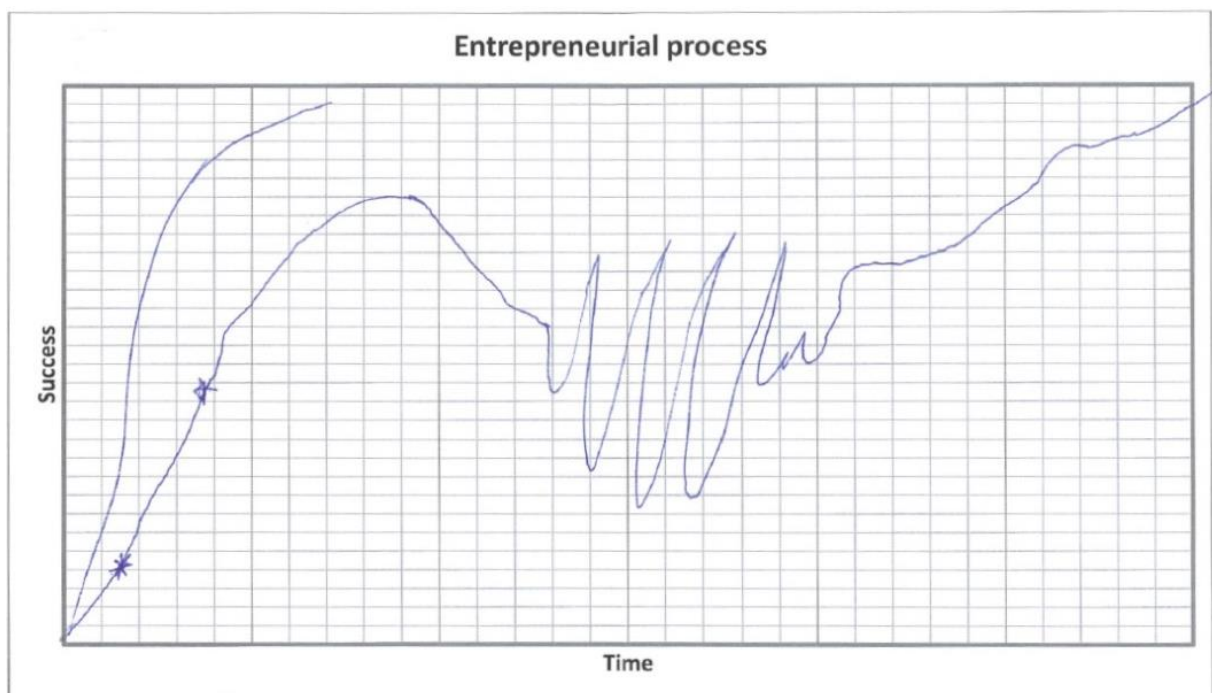


Figure 16. Graph entrepreneurial process Ein#16.

Historical contingency indicators

“Two years ago, I resigned from my position at a Dutch bank.” This ‘events’ indicator can be considered as the start of Ein#16's startup phase. Ein#16's underlying reasoning to resign is described further on in the personal contingency part. First Ein#16 decides to join an existing startup. *“To look if I could do my part in that startup. But after three months trying out, it was not the right match.”* After a while being back home Ein#16 decided to sort out a long-time idea. *“I said to my*

wife. *That heated pillow story, I am going to do that anyway, I just want to know how this will work out. Now I am going to stop saying that it is a good idea, I am going to do it. I made a financial analyses and I went for it.*"

A concurrence of circumstances is responsible for the emergence of this heated pillow idea, 10 to 15 years ago. *"The car seat heater in my car broke down, then I went to the bottom of it, and I saw technology that even I understood. I thought but why do I see this technology only in cars, probably it is expensive, probably it is laborious."* The second circumstance was the Ein#16's wife being pregnant of their first child. *"She was outside all the time but when I was not here then she did not want to sit outside, without a fire basket and all. I said that is a shame, if you enjoy sitting outside, I am going to heat that bench for you."* In 2014, during a dinner, Ein#16 is able to sell the pilot to the restaurant owner where he is eating his meal.

Another 'events' indicator that influenced the entrepreneurial process positively by getting much attention is a pitching event on national television.

The last few years Ein#16 has observed a entrepreneurial trend that has influenced entrepreneurial processes in the Netherlands in a positive way, including his. *"The market conditions for sustainable entrepreneurs is really very good. That is something of the last few years. And the tax incentives for renewable kinds of things, we join in with that as well. Market conditions are favourable and that certainly plays a role along that it makes things easier, you have got a greater chance of success. The soil is fertile."* Ein#16's investor is also a public fund, so the funding is determined from above in terms of governance.

Personal contingency indicators

As mentioned before, Ein#16 has got an attached 'experiences' indicator with his aforementioned resignation. Ein#16 was successful in his job, having a function with high responsibility, especially considering his age. However, there was a hitch. *"Inner dissatisfaction, not drawing enough satisfaction. The last job I really did not like it. It was just about banking. After three or four months I really thought this is a waste of time. In the end I had to deal with unmotivated people. I quitted without knowing what I was going to do."*

Next to these 'experiences' indicator, two 'skills' indicators that Ein#16 developed during his previous work activities are identified. First, Ein#16 as financial expert spent a lot of time reviewing startup plans including the financial aspects. Ein#16 is therefore financial savvy and can make financial prognoses, risk assessments and predictions. Obviously this is of great value when starting a company. Second, Ein#16 has learned how to sell himself. In other words, he has sales experience, which came in handy selling the pilot product.

Ein#16's study business administration and related knowledge has laid a broad foundation in entrepreneurship and can be considered as a 'knowledge' indicator. Several 'relationships' indicators have played a role in Ein#16's entrepreneurial process, regarding home support, meeting the business partner and opportunity formation. *"The way I found my business partner. I talked to someone in my network about heating office chairs and at one point we were talking about business and he said you have to talk to a certain person. That person became my business partner. I was not looking for this result, but it happened."* The Climate-KIC and UtrechtInc incubator network has played an influential role as well regarding Ein#16's entrepreneurial process. *"Through the UtrechtInc*

network, I came across the Climate-KIC network, that was a good move. I would not have been able to come by that network by myself. You are made more successful by doing the right things.” Another ‘relationships’ indicator is related to Ein#16 previous job. *“Also former colleagues. I drove around in the investment world, so I know a lot of people with large networks, especially individuals who invest a lot. So that helped.”* Last but not least the ‘relationships’ indicator related to the home situation. *“My wife also has a favourable effect. Because she says you have to do whatever makes your heart beat faster. There are also women who say continue to work because you are making a lot of money.”*

An ‘obsessions’ indicator that has contributed to the idea development is Ein#16’s passion for skiing. During winter sports holiday Ein#16 continuously was confronted with inefficient terrace heat systems, something that was clarifying the need for his idea. Another indicator in this division is Ein#16’s photography hobby. *“I think images are important. I like beautiful things, that have affected the design, positioning and branding of the product.”*

Interpretation interviewee

Ein#16 suggest that the role of contingency related to opportunity formation and success can be significant. Especially related to the idea development, *“I may never came up with the idea if the car seat heater in my care did not break down,”* and related to his business partner, *“I was not looking for this outcome but it happened, yes that is coincidental.”* However, Ein#16 thinks that one can influence contingency. *“You are doing something and you put all your energy in something. And whatever you give attention grows. So you are looking for contingencies and you are open your mind for them. I think if we open ourselves, there are many opportunities in life. But sometimes you are in a tunnel vision, then you are not open for it.”*

The following quotation reflects Ein#16’s interpretation of contingency in a proper way. *“Of all things that happen, I do not think that half of it is dependent of contingency. But of all things that happen where contingency have a certain influence, I think this influence is very big. A 80 percent plus. If you are in the right flow, you will be helped to stay in that flow. But when thinking of chance encounters, I think the contingency influence is less.”* In other words, Ein#16 ranks the role of contingency in his entrepreneurial process related to opportunity formation as an 8 in a scale from 0-10.

4.17 Interview Fin#1

Contextual background interviewee

Fin#1 is strategic advisor of an organization that originates and select clean tech ideas. It collaborated with its members and partners to close the implementation gap between an idea and a sustainable business. The organization offers business and project support and promotes, coordinates and supports clean tech opportunities.

Interpretation interviewee

First, the facilitating actor’s view on the earlier described theoretical concepts that serve as sensitizing concepts such as ‘events’ and ‘trends’ indicators are portrayed. Afterwards, Fin#1’s organizational perspective related to contingency is discussed. In other words, whether Fin#1 thinks of contingency as controllable and if so, how this is unrolled in practice.

The following insight is related to the 'relationships' indicator. Fin#1 indicates that international clean tech conferences play a significant role in the discovery of these technologies. Before a certain conference takes place, choices are made which technologies are considered to be worthy to take a closer look at. However, generally speaking this planned manner does not necessary leads to better matches between new clean technologies and further development possibilities and possible applications in the Rotterdam region. *"Still something special is that you will be surprised at times when you least expect it to happen. And you eventually end up with someone or some technology through the network by a roundabout way."*

Another insight is related to 'events' indicators. Broadly speaking, Fin#1 indicates that in the Netherlands financing projects is subjected to politics. More specifically, Fin#1 indicates that financing related to the R&D scene is subjected to politics even more. And clean tech technologies are considered to be part of this R&D scene. In other words, 'events' indicators are influencing the developing process of clean tech technologies.

Furthermore, Fin#1 is of the opinion that contingency influences the various stages in the process of successful implementation differently. According to Fin#1, contingency is of less importance in the technical stage, the stage which is purely focused on the development of the clean technology itself, *"because a technology works or does not work."* However, the acceptance of the outside world, described as the soft side of the development process, is considered to be more complex and more dependent on contingency. The final steps, bringing in financial resources and bringing the technology to the market by a launching customer, *"a public authority for example"*, are considered to be most complex and dependent on contingency more.

Even before this technical developing stage, Fin#1 believes that contingency plays a significant role regarding idea generation. *"I think that in idea generation coincidence plays a huge role. If only because you have associations with the things you see around you because you grew up in certain way, in a certain place and have had certain education."*

Next to these insights related to contingency indicators, now more organizational related insights are discussed. First off, Fin#1 believes that in general people are stuck in something she defines as management thinking. *"The belief that you can direct anything in a specific direction. While perhaps you sometimes have to have some kind of hope and space for coincidence."* To achieve this space and chase this hope, a certain degree of organization is required. *"I think you always should plan to create a foundation from which you operate."* This foundation can be considered as an ecosystem. *"You actually should see it as an ecosystem in which you invest. Because it can be very hard to define a goal to which you are aiming. It does not work like that in innovation. So we try to invest in that basis but you also need space for that coincidence."*

Second, this view is also reflected on the Dutch education system. Fin#1 believes that nowadays the scale is tipped in this system. *"There currently exists imbalance to what extent you can choose courses, to what extent I have the freedom to chase a custom-made study program."* In other words, Fin#1 believes that students should get more freedom to choose for courses they consider valuable.

In sum, Fin#1 indicates that contingency can have a significant influence in idea generation and in the after technical development stages, for example in bringing in launching customers. From an

organizational perspective, Fin#1 indicates that there must be left free space to be able to discover, identify and use contingency. In this sense, organizing everything watertight is counterproductive.

4.18 Interview Fin#2

Contextual background interviewee

Fin#2 is responsible for the commercial management and community building at a large privately owned industry park, which includes Greenhouse, an incubator with a clean tech focus.

Interpretation interviewee

First, the facilitating actor's view on the earlier described theoretical concepts that serve as sensitizing concepts such as 'events' and 'experiences' indicators are portrayed. Afterwards, Fin#2's organizational perspective related to contingency is discussed. In other words, whether Fin#2 thinks of contingency as controllable and if so, how this is unrolled in practice.

Fin#2 indicates that certain 'events' indicators can serve as kick-starts for entrepreneurial activities. *"What I see here is that entrepreneurs often have worked in business, while thinking for several years that they can do certain things better or at least can do things differently. Some of them were finished with their boss who understands nothing. So they decide to do it all by themselves."* Most of the time, there is something that brings about the start of this entrepreneurial journey. *"They are often compelled by necessity, for example influenced by an economic crisis."* In other words, Fin#2 notices that 'events' indicators accompany the entrepreneurs from their pre-startup phase towards their startup phase.

Another 'events' indicator has influenced the direction and focus of a friend's work activities, which not necessarily include entrepreneurial activities. *"A good friend of mine has become an oncologist because he lost his mother to breast cancer at an early age. And that is his life, he is incredibly driven. I ask him sometimes are you driving yourself mad. But the energy is so deep, and that is coincidental. If it did not happen, he would not have done it, he is very honest about that."*

Also a 'trends' indicator is considered by Fin#2 to be influential in entrepreneurial processes. Especially differences between trends in the Netherlands and Germany. In this case, Fin#2 argues about living labs, an experimental environment in real life settings, used for the development and testing of new possible entrepreneurial technologies. *"Generally speaking Germans do not have an opportunistic and experimental mindset. Therefore, in Germany relaxing rules and tolerating experimental space is an absolutely no-go."* These are conditions that are necessary to set up living labs. Therefore, setting up living labs in Germany is a much harder task than in the Netherlands. In other words, more linked to contingency and entrepreneurship, 'trends' indicators can be different per country and can influence the entrepreneurial process by affecting the entrepreneurial environment.

The following insights are related to 'experiences' indicators. First a more general remark. *"Networking is important. If people do not meet then they are just missing out."* The second insight is about upbringing and heritage as possible indicators. *"We as children of our parents and grandparents, we have inherited things cumulatively. Something that you have received from your grandfather, for example having miniature trains as hobby, it is actually in yourself, almost genetically. Like when you are touched by smelling a certain smell of the past."*

Fin#2 indicated that he is planning contingency. *“Planning coincidence simply consists of organizing a program with various informal activities. Sometimes you have to give someone a leg-up or point something out for someone. Afterwards, they should do it themselves (the entrepreneurs), planning and encouraging coincidence. By dealing with each other in an informal way, great conversations emerge and suddenly things and people are linked with each other. The organization behind accomplishes this.”* By building the community, making it more divers, Fin#2 is stimulating contingency as well. *“We are working on cross-overs between design and technology, connecting those two. In the area we have a building where twelve designers are seeded. They have a refreshing effect on the network, by being opportunistic and approaching others.”*

In sum, Fin#2 indicates that contingency indicators can have a significant influence on general processes and also on entrepreneurial processes. From an organizational perspective, Fin#2 indicates that contingency partly is planned, stimulated and encouraged by organizing informal indicators.

4.19 Interview Fin#3

Contextual background interviewee

Fin#3 works for an innovative project agency that links sustainability and innovative projects to students. In addition, Fin#3 has done research in entrepreneurship.

Interpretation interviewee

First, the facilitating actor's view on the earlier described theoretical concepts that serve as sensitizing concepts such as 'relationships' and 'experiences' indicators are portrayed. Afterwards, Fin#3's organizational perspective related to contingency is discussed. In other words, whether Fin#3 thinks of contingency as controllable and if so, how this can be stimulated.

Fin#3 underlines the importance of networking and complimentary opportunities. In other words, the importance of 'relationships' indicators. First from her own experiences. *“I had joined a sustainable entrepreneurial contest, organized by the organisation I am with now, and I had won the contest. A few months later they ask me to be an ambassador. I signed up for that, and because they still knew me everything was like hand and glove.”* In addition, Fin#3's fellow students were already active in the same organization, *“that was beneficial for my own interests in the subject.”* Third, Fin#3 elaborates on the importance of networks for entrepreneurs. *“Startups are better off when they could use a established name in their favour, such as a large company.”* Fourth, Fin#3 indicates that most of the startups in her environment have originated from large companies and research groups. Entrepreneurs who began independently are the minority. This could imply that the majority of entrepreneurs is using old and existing networks to develop their startups.

Additionally, Fin#3 has a view on this starting phase that is related to contingency as well. *“You should always have some kind of push to developed yourself. A startup only can be successful when you are completely backing it. You have to have a big motivation. This can be triggered by events.”*

Furthermore, Fin#3 indicates that a certain degree of contingency has played a role in selecting their first partner and the cooperation with this partner in the starting phase of the stimulation program. *“Someone in our team had attended that school. The school was very cooperative. Other schools were not. If they were part of our pilot, we would have a less positive stand.”*

To conclude, Fin#3 believes that contingency can be influenced in a way. *“The more you challenged yourself, the more chances of contingencies.”*