How can the formation of opportunities be identified in the exploration process of early stage startups in Norway?

An inductive and explorative study of how 11 Norwegian startups progressed from idea to business.

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Abstract

Entrepreneurs form new ventures guided by their vision and the formation of a clear opportunity to make it a reality. Their probability of successfully going from an idea to business is heavily dependent on the effective utilization of their knowledge and the creative implementation of resources available in the environment. At the early stage of any startup company and during its development, founders actuate the formation of **opportunities** through the processes of **exploration for discovery** and **exploration for creation**. Very often, the actions and decisions taken by these founders exhibit patterns already described in theories of entrepreneurship and innovation. Likewise, many of the indications prescribed in multiple frameworks that fundament these theories are followed consciously or unconsciously by entrepreneurs during the exploration of opportunities to attain innovation.

We conducted an exploratory research of current literature corresponding to the topics of opportunity formation and the process of exploration for innovation. This thesis takes into account such research for studying how events related to the formation of opportunities can be identified by looking through the theoretical lenses of three different theories of innovation and entrepreneurship: Jobs To Be Done, Entrepreneurial Bricolage and Networking theory. An analytical framework was developed based on these theories and was used for examining the primary data collected from conducting semi structured interviews with the founders of 11 Norwegian tech startup companies.

The exploration process is subdivided in the stages of **ideation**, **iteration** of prototypes and initial **validation** given by consumers or investors that supported the product or service, allowing the company to grow beyond startup phase. The results obtained from analysing the exploration process that each founder underwent are presented in transcripts, tables of coding, and timelines. Through the discussion of the results we found that events related to the formation of opportunities can be effectively identified throughout the exploration process using elements extracted from theories of entrepreneurship and innovation. The findings of our inductive reasoning are encapsulated in a model for innovation management in startup companies that can be used by researchers to examine exploration practices for either the creation or discovery of opportunities. This can also be considered when examining conditions imposed by resource-constrained environments in which new companies are usually born.

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We Would also like to thank all of the interviewees who took the time to give us such invaluable information as well as the insight and attitude of some of the leading entrepreneurs in the Norwegian ecosystem, for this we are eternally grateful.

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1 Introduction

Our research encompasses the examination of the exploration process of 11 Norwegian-born startup companies that successfully progressed from idea to business in the tech industry. The exploration process initiates when one or more cofounders combined their ideas and started building a company. They continually iterated through different solutions to the problem and finally found validation of their products or services by introducing them to the market. The goal of this thesis is to give a clear overview as to how opportunities are formed and developed within these startup firms in Norway. We do this by analysing the actions and decisions of the founders going through their respective entrepreneurial paths towards innovation. We started our research by examining literature on the nature of opportunities, organizational ambidexterity and the relevance of these topics for the processes of innovation in startup companies.

For many years, researchers have studied the implications of employing ambidextrous practices in organizations to foster innovation (O'Reilly & Tushman, 2004, 2013). The theory of ambidexterity is present in multiple studies, establishing that the development of innovative solutions requires dual capabilities to both explore and exploit existing knowledge and resources (March, 1991). However, founders of new ventures, known as "startups", rarely have any product or service to exploit. On the contrary, they start with an exploration process in which they form opportunities to build products and services that may result in an innovation. The progress they have, going from an idea to a business, is usually guided by a vision (Gans & Stern, 2003; Sapsed, 1999). Making that vision a reality depends on the opportunities they take on to develop their ideas. Entrepreneurs gather knowledge to discover opportunities, relying on their unique perspective for analysing problems around themselves or other people. They also create opportunities utilizing the resources available in their environment, constructing innovative solutions that consumers need and want in their lives.

Researchers have encountered many challenges when examining the approaches that founders of startup companies take to explore and exploit opportunities for innovation (Benner & Thushman, 2003; Cao, Gedajlovic, & Zhang, 2009). Some of these researchers even suggest that the majority of startups are founded in an environment where there is scarcity of resources (Baker & Nelson, 2005; Turturea, Jansen, & Verheul, 2014). In this context, the topics of innovation and ambidexterity have been explained from different

angles. However, we feel that there are few studies that give conclusive evidence about the manner in which startups take on opportunities and how these relate to the approach they have going from idea to business (Alvarez & Barney, 2007). It is in our opinion, that the lack of research in this area is due to the difficulty present when employing any one particular theory of entrepreneurship and innovation for studying the exploration process for opportunity formation in early stage startups.

1.1 Context of Research

Founders of new companies seeking innovation need to manage and prioritize the use of resources and operations for exploring their vision. This is essential when attempting to create or discover opportunities for innovation, that will later be exploited (Cao et al., 2009). After an initial review of current literature about exploration and exploitation of opportunities, we found that research about ambidexterity was predominantly focused on larger, more established organizations (Andriopoulos & Lewis, 2009; Raisch et al., 2009). Initially we examined whether there was potential to describe a simple model for innovation management in the context of Small-Medium Enterprises (SMEs). However, because we were interested in the approach of these businesses towards the formation of opportunities to innovate, we decided to look into the stories of the foundation and early stages of such firms, more precisely, when they are still considered startup companies. With this in mind, we also chose to limit our research by focusing on obtaining data about their exploratory activities, rather than their current exploitation of opportunities.

Keeping our focus on the initial stages of these startup companies we remove the need to consider any current operations a firm may have as we are only interested in the company at the beginning of their journey. We examine their exploration process until the moment they introduce a version of the product or service into the market that receives a positive response from customers. Founders at such an early stage are not partaking in exploitation processes, and therefore they are more willing to make riskier decisions and focus all their efforts on the formation of opportunities. As Alvarez, Barney and Anderson (2013) state, “although exploitation is not irrelevant in realizing the potential of opportunities, the process of forming opportunities—both those discovered and those created—is usually more consistent with exploration than exploitation.” Additionally, in the exploration process, the entrepreneur's ambition is not always limited to generating incremental innovations (Turturea et al., 2014).

Teams in early stage startups are constantly adapting their strategies and moving rapidly, in line with their results, hence, making more prominent their capacity to be increasingly creative at the time of reaching radical innovative results.

From this point forward, we contextualize our research around the gestation period of startup companies seeking to innovate. We emphasize that founders of such firms often prioritize the exploration over the exploitation of opportunities. Furthermore, Alvarez, Barney and Anderson (2013) state that there is an understudied challenge in assessing how "entrepreneurs engage in fundamentally alternative approaches to decision making" at the moment of discovering or creating opportunities. Based on our knowledge of the current literature that presents theories of entrepreneurship and innovation, we were motivated to do an examination of the entrepreneurs' decisions and actions that contributed to the formation of opportunities during the exploration process at the early stage of the startups they founded. In doing so, we developed tools to identify and visualize the formation of opportunities that hopefully will aid other researchers interested in developing methodologies to further study this topic.

1.2 Background of the Study

Due to our own personal background as students of entrepreneurship and innovation and also founders of a startup company here in Norway, we decided to research the decisions and actions taken by other founders of startup companies in Norway, that have successfully gone through the process of exploration as broken down into three stages: ideation, iteration and validation. We employ these three-stages to define the chronological order that gives basis to any exploration process directed towards innovation. In such a process, founders of startups balance their team's activity between the creation and discovery of opportunities to obtain innovative results. Hence, for our research, we were interested in interviewing the founders of companies with an innovative product or service that had achieved proven validation, as we define by customer adoption or external investment. We looked for Norwegian-born companies (Founded by a Norwegian) that were capable of gaining traction, and solving a particular problem in the tech industry by addressing a set of needs for users in the market. When examining the exploration process of these companies we attempted to adapt differing entrepreneurship and innovation theories to identify how they formed opportunities,

progressing from their business idea, iterating during the design of their solutions, and achieving commercial validation.

1.3 Realization of Thesis Direction

In recent time, the exploration of opportunities has been an area of entrepreneurship and innovation that has received critical attention (Alvarez & Barney, 2007, 2008; Shane, 2003; Shane & Venkataraman, 2000). In this sense, we were very interested in exploring the practical application of the theories studied within the Master programme that had relevance to our activities as co-founders of a startup company. We looked into the mind-set of Amphibious Entrepreneurs (Powell & Sandholtz, 2012), entrepreneurial approaches to situational control (Wiltbank et al., 2006), the strategic management of innovation (Schilling, 2012), global strategy (Peng, 2009) and multiple papers describing emerging theories in entrepreneurship research (for eg. Fisher, 2012; Sarasvathy, 2001).

Based on the analysis of these theories, we zoomed in on some of the most relevant and concrete theories of entrepreneurship and innovation, that in our opinion provide objective explanations to the mind-set and actions of founders seeking to provide innovative solutions. We saw potential in exploring how these theories may explain broadly how the thoughts and actions of entrepreneurs belong or can be associated to processes for creation or discovery of opportunities, during exploration. We challenge ourselves by attempting to relate some of these theories directly to the exploration process of a firm that has just begun operations, connecting this process to the formation of opportunities.

1.4 Problem Formulation & Propositions

With a focus on the exploration process of Norwegian startup firms, we attempt to make a contribution to the research of entrepreneurship and innovation by studying the nature of events associated with the formation of opportunities during the early stages of companies. We do this by asking the following question:

How can the formation of opportunities be identified in the exploration process of early stage startups in Norway?

Within our research, we put forth propositions to focus our attention on correlating the formation of opportunities with particular elements extracted from theories of innovation and entrepreneurship.

Two concepts that we examine, the exploration for discovery and the exploration for creation, have received ample attention from researchers trying to better understand how opportunities are formed (Alvarez, Barney & Anderson, 2013). According to the Discovery Theory (Alvarez & Barney, 2007), opportunities are discovered as a result of the entrepreneur's knowledge of the environment in which the opportunity is formed. It is therefore vital that for an opportunity to be discovered, the individuals involved must have a sound knowledge of many aspects of the industry and the market in which it is formed. To make it easier to identify the discovery of opportunities during the examination of the exploration process we put forth our first proposition that:

Proposition 1: ***Events related to the Exploration for Discovery of opportunities can be identified using theories of entrepreneurship and innovation that emphasize knowledge utilization.***

Current literature regarding the creation of opportunities, suggests that an entrepreneur that creates an opportunity is an external player to the environment in which the opportunity is created. According to the Creation Theory (Alvarez & Barney, 2007), entrepreneurs must rely on their creative acquisition and utilization of resources in order to create an opportunity within a particular industry. To make it easier to identify the creation of opportunities during the examination of the exploration process, we therefore put forth our second proposition that:

Proposition 2: ***Events related to the Exploration for Creation of opportunities can be identified using theories of entrepreneurship and innovation that emphasize resource utilization.***

In this thesis, we explore elements of theories of innovation and entrepreneurship that we have learnt throughout our Master's programme and alongside it, in an attempt to address our propositions and answer the research question. In order to better visualise this research question we created a diagram to depict what we aim to examine (Figure 1).

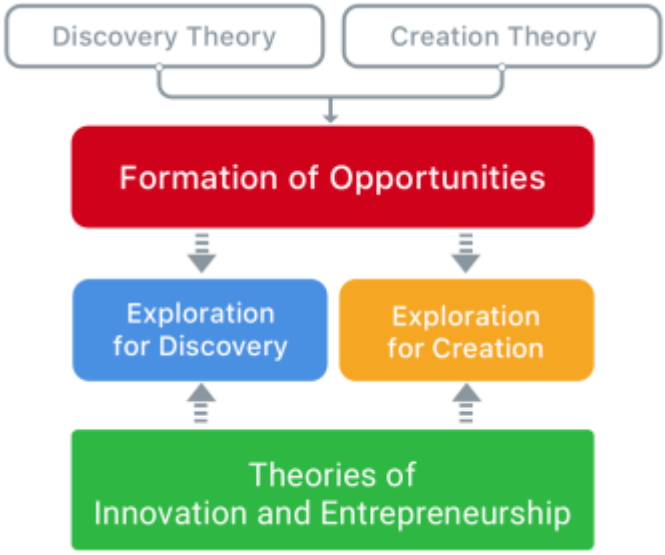

Figure 1: A visualisation of our Research Question

We consider that a more thorough study of the exploration process in startup companies can provide good indications of why some startups have better possibilities of generating breakthrough innovations. We also recognize the relevance of employing current and novel theories of entrepreneurship and innovation for studying the patterns in the qualitative data gathered from companies in Norway. We limited the collection of this data to the process of exploration that 11 Norwegian companies underwent, seeking innovation during the time they were considered startups. With our thesis, we hope to contribute to the available literature for the study of strategic innovation management in startups.

1.5 Structure of the Thesis

The remainder of this thesis is broken down into 5 chapters (chapters 2-6) Chapter 2 will be used to examine further the current literature that we have developed our theoretical framework upon, we will analyse the different standpoints on the formation of opportunities to innovate and delve deeper into the process of exploration with an analysis of the creation and discovery of opportunities. Our third chapter will present the research methodology we used when conducting our study. This includes the procedure we took when creating our research design and how we recognised and managed challenges in order to produce reliable and valid data. Chapter 4 will go further into how we developed our study by examining our analytical framework, the process of primary data collection the development of our coding categories used to interpret our data, the process of validation of data and the creation of a model to better analyse the data. Chapter 5 will present the results from our research and how

the data fits into the different phases of opportunity generation and development, both the cross analysis of cases and by looking at the cases individually. Our final chapter further discusses our results and how they are relevant to current theories and our research question and propositions. We will present the limitations of our study, potential future avenues of research and concluding remarks.

2 Literature Review

The majority of literature we reviewed for this thesis was found in “Oria" or taken from books and papers that we have read during our studies of the master in Innovation & Entrepreneurship program. Some of these readings were either introduced to us in class or we looked for them outside class to complement our knowledge of innovation and entrepreneurship theories. From these reading materials, we reviewed the most relevant literature related to innovation, formation of opportunities and the exploration process, particularly with reference to those that applied to the study of startups.

2.1 Innovation in Startups

Startup companies face pressure to introduce innovative products or services into the market. The hope being that consumers are willing to adopt and consume your product or service over others. It is fair to say that the majority of founders start with few resources necessary to ensure the sustainability of a firm in its early stages. Therefore, if they don’t manage to attain innovation and create a steady and stable revenue source for the company, it will almost certainly fail (Venkataraman, 1990). In this sense, innovation becomes “a competitive race that must be run with speed, skill, and precision” (Schilling, 2012). To innovate, founders usually start by exploring opportunities and gradually introduce a solution that scales to disrupt the dynamics of competition, overtaking larger segments of the market. When startups innovate, with a focus on selling products and services, they will generally exploit attributes like convenience or low prices that incumbents or competitors cannot match. This may result in the startup changing the balance of the market and disrupting an industry (Christensen, 1997). However, the process of exploration for opportunities to innovate, does not always result in a success, and many startup companies fail.

To guarantee short-term survival and generate an opportunity to flourish over the foreseeable future, these new companies need to come up with discontinuous innovations (Christensen,

1997), that is, those “radical advances that profoundly alter the basis for competition in an industry, often rendering old products or ways of working obsolete” (O’Reilly & Tushman, 2004). Consequently, exploration processes regarded as a success should result in the discovery or creation of a breakthrough solution "having above-average technological value relative to a population of comparable innovations" (Bailey, 2013).

Researchers have generated several insights about the effects of different kinds of innovation on the likelihood of success when companies are dealing with the competitive dynamics of the markets. Melissa Schilling (2012) condenses this research in her book about strategic management of innovation. Broadly, the most recurrent dimension to categorize innovation is to define it as radical or incremental (Peng, 2006; Schilling, 2012). The former are those technological breakthroughs that are novel and substantially benefit their creators. The latter are small improvements in existing products and operations that let companies operate more efficiently or deliver more value to customers (O’Reilly & Tushman, 2004).

Additionally, Schilling (2012) defines architectural innovations as consisting of applying technological or process advances to fundamentally change some organizational routines, while component innovation is defined as “changing existing elements of the business or recombining them to create some novel product or service offerings without affecting the overall configuration of the system” (Schilling, 2012). Companies that want to become innovative need to gather the knowledge of the market necessary to develop and introduce new products, services and production processes (Burgers & Jansen, 2008). However, “in a recent McKinsey poll, 84% of global executives reported that innovation was extremely important to their growth strategies, but a staggering 94% were dissatisfied with their organization's’ innovation performance” (McKinsey poll cited in Christiansen et al., 2016).

It is becoming increasingly accepted that startup companies are better suited to innovate due to their smaller size and flat style of management. These smaller companies are often more flexible and entrepreneurial since their founders tend to be more driven to take risks than those at large firms, knowing that a step towards their vision will have a higher return personally and economically if the innovations generated from their work are adopted or introduced successfully into the market (Agarwal et al., 2004). Thus, it is not surprising to know that the most common reason for which many startups incorporate, is that employees of big and rigid corporations leave frustrated by their inability to make their ideas a reality

inside the organization, "innovators at entrepreneurial firms are better able to reap the financial gains associated with innovations, thus fuelling their motivation to charge ahead"(Peng, 2006). The job of these founders is to become innovators, constantly searching for opportunities and pursuing strategies that allow their company to penetrate new markets, differentiating and sustaining their competitive advantage (Schilling, 2012). Furthermore, it is empirically evident that the compact environment of startups allows shorter development cycles and empowers people to be more creative (Vanevenhoven et al. 2011).

It is no surprise how innovation-driven startups are a perfect fit when explaining the “theory of disruption” introduced by Clayton Christensen (1997). He coined the term “disruptive innovation” to describe the phenomenon in which incumbents tend to ignore disruptive technologies coming from new companies because they dedicate their resources to the exploitation of current technology. They want to keep profiting from sustained innovation, just having a steady rate of improvement on products and services that align with the demand of mainstream customers. Even if some of their clients express an interest in solutions with a different set of attributes, these may require a new business model in which profit margins are apparently insufficient to justify the cost of changing the internal structures of the incumbent firm. This behaviour explains how established companies leave themselves vulnerable to competition from smaller companies, by abandoning the lower end of the market (Christensen, 1997).

The theory of disruption can help to explain how discontinuous innovation can seem unattractive to explore by big companies focused on exploiting more established solutions and technology that appeal to the greater mass of customers in the market (Christensen, 1997). For both big and small firms, assessing and consequently reaping early profitability of emerging opportunities is difficult since they must balance dual requirements for simultaneously investing in the core business and efforts to innovate. However, it might prove to be less challenging for new startups whose primary focus is to aim for growth. Their eagerness for achieving results to remain competitive can only be exceeded by the urgency to discover or create opportunities to develop new or better solutions to problems that people have. The usually constraining financial situation and the constant external pressure of bigger competitors might mean failure for most people, but for innovators, these elements, often, become the fuel to take ideas and convert them into innovative products and services. In theory, the most innovative solutions represent the best long-term opportunity for a company.

However, the level of adoption that customers will have is hard to gauge, making the attempt to profit off the "pull or push" of a certain technology become the determining factor of whether a company will succeed or fail (Christensen, 1995).

2.2 The Nature of Opportunities to Innovate

The relation between innovation and opportunity is interrelated in the work of Joseph Schumpeter (1934), he does not explicitly promote the concept of opportunity, but instead "espouses the notion of innovation" (Alvarez & Barney, 2007). Taking the traditional standpoint in which all companies operate under conditions of imperfect competition, entrepreneurs represent economic actors that seek to exploit such imperfection to generate economic profits with new ventures (Casson 1982, Casson & Wadeson, 2007). In this context, competitive imperfections are the factors of the market that define how and why people consume products and services with different attributes (Venkataraman 1997). Opportunities arise from competitive imperfections in markets due to the consumer preferences within an industry or market (Kirzner, 1973). In this research tradition, the imperfect competition is often fuelled by exogenous shocks, such as the advent of new technology, technological change, new regulation, political shifts, and macroeconomic changes (Schumpeter, 1934). In this thesis, we assume that these shocks make new knowledge and resources available. For us, these two elements become the source of opportunities when entrepreneurs are capable of forming and exploiting them for generating innovative success.

In the field of entrepreneurship and innovation, different theoretical approaches around the existence of opportunities and where they come from has "generated significant debate" (Alvarez & Barney, 2008, with Young 2010). The Austrian Economist point of view (Kirzner, 1973, 1979,1997) adopts a positivist perspective that sees opportunities in the real world as existing definable and identifiable objects independent of actions and decisions made by the entrepreneur (Azevedo, 1997). This view is realistic in "assuming reality has an objective existence independent of individual perceptions" (Alvarez, Barney, & Young, 2010), and that opportunities are "given" when discovered (Shane, 2003) by attentive and alert individuals (Kirzner, 1973).

Conversely, seeing opportunities as "enacted" by people or corporations through their unique knowledge of technology and the market is the basis of the constructionist approach to opportunity formation. Alvarez, Barney and Young (2010) explain that "in a constructionist view all resources are subject to interpretation." In contrast to realist perspectives, a constructivist perspective sees opportunities as the fruit of social construction from emergent processes initiated by entrepreneurs (Sarasvathy, 2001) and that "reality does not have an existence independent of individual perception" (Alvarez, Barney, & Young, 2010). Hence, opportunities only exist in the perceptions of individuals and due to the unique interpretation of the environment. However, Alvarez and Barney (2007), point out limitations of the Constructivist view, as knowledge and resources are not relative to perception, but instead they are available not only to those that innovate but to everyone in an industry, especially "when the opportunity is tested against an 'existing market' through human action."

Considering that new exogenous shocks can emerge to generate impact on the business cycle and technological progress (Kirzner, 1973) and that entrepreneurs introduce innovations in a market that exists independently of the characteristics of that individual (Schumpeter, 1934), the constructionist work moves closer to a view that resembles the evolutionary realist approach (Campbell, 1960). This approach is presented as the opportunity to integrate both important elements of the realist and constructionist viewpoints to better explain opportunity formation (Alvarez, Barney & Young, 2010). In doing so, the timeless debate that has been a thorn in the side of the progression of opportunity formation theory can be alleviated by showing that elements of both views are constantly present (Moldoveanu & Baum, 2002).

2.3 The Theories of Discovery & Creation

A way of addressing the debate between realists, constructionists and evolutionary realist's views of opportunity formation is to employ the concept of opportunity creation or discovery. Alvarez, Barney and Young (2010) presented an in-depth analysis of the differences between the realist perspective, the constructivist perspective, and the evolutionary realist perspective in the formation of entrepreneurial opportunities. The work of Alvarez and Barney (2007) titled "Discovery and Creation: Alternative Theories of Entrepreneurial Action" is then presented at the core of the debate between discovered realist opportunities and created evolutionary realist opportunities (McMullen & Shepherd, 2006). It follows to argue that opportunities can be discovered as well as created during the entrepreneurial path of founders

of early stage startups (Alvarez & Barney, 2007). To better understand the progression that these distinct theories of opportunity formation are coming from, we created a diagram that portrays their connection (Figure 2).

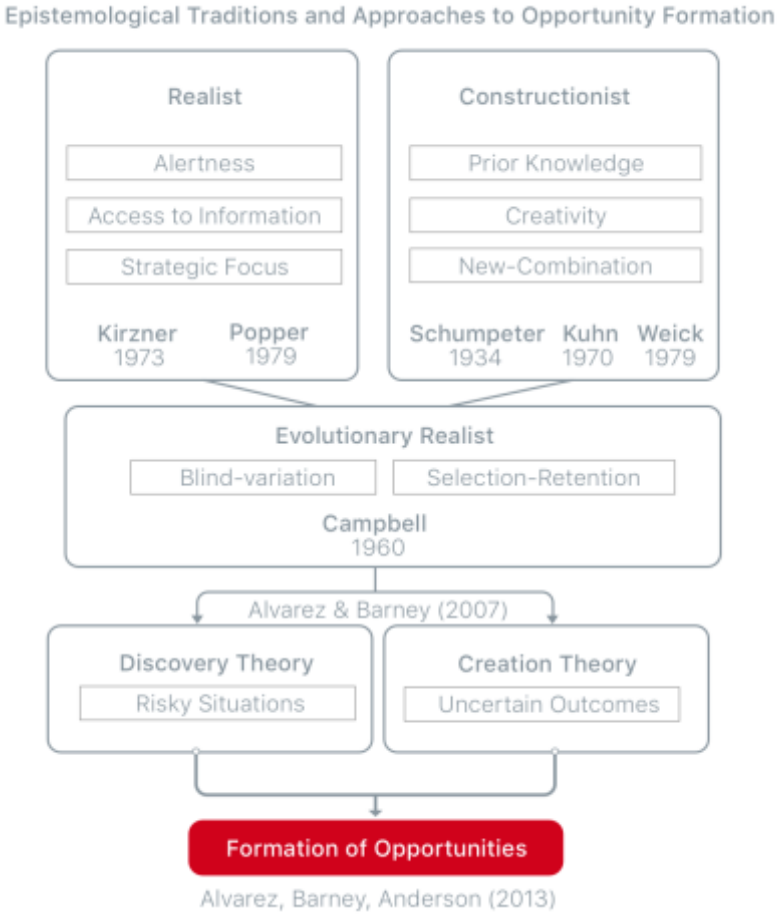

Figure 2: Epistemological traditions and approaches to opportunity formation

Observing Figure 2, we can infer that the process of opportunity formation has been studied through the years in a very clinical way and from diverse perspectives. By now, scholars have retraced the theories of creation and discovery of opportunities back to earlier entrepreneur and innovation scholars (Aldrich & Ruef, 2006).

Researchers have generally been in one of two camps, the discovery of opportunities or the creation of opportunities (Alvarez & Barney, 2007). The basis of Creation Theory can be traced back to Schumpeter (1934, 1939), whom coined the term 'Creative Destruction' and viewed entrepreneurs as individuals with foresight, and creativity. Schumpeter (1934) conceptualises opportunities as innovations, his theory was very similar to the actual concept of opportunity studied today and how they are created through the novel combination of

resources (Alvarez, Barney & Young, 2010). On the other hand, the routes of the Discovery Theory can be traced back to Kirzner (1973, 1979), whom focuses on alertness and spontaneous learning, explaining that opportunities exist but that current participants in the market are ignorant of their existence. Therefore, it takes an individual that is alert and willing to take calculated risks to discover them.

Regarding the capacity of entrepreneurs to take on opportunities, Joseph Schumpeter's (1934) theory of innovation argues that the entrepreneur is the leader whom recombines their resources in an innovative way, disrupting an otherwise economically stable ecosystem and its incumbents via creative destruction. In this view, the change comes from outside the ecosystem in which it happens, it is as a direct result of the person driving it (Schumpeter, 1934). In this sense, Schumpeter can be considered one of the first scholars to describe the theory of opportunity creation, which has further been extended by several scholars (e.g., Casson, 1982; Sarasvathy et al., 2003). In a similar manner, the first contributions to the theory of opportunity discovery to Kirzner (1973), who views the entrepreneur as an individual that is more alert and attentive to the environment than their peers, seeing opportunity where others do not, usually because of prior knowledge and/or experience. More recent research into the discovery of opportunities has expanded upon this (Shane, 2003; Sarasvathy et al., 2003). Finally, scholars such as Shane & Venkataraman (2000) do not suggest that these two theories are opposing but as different types of opportunities that are constantly coexistent.

More recently, Alvarez Barney and Anderson (2013) describe how opportunities "are complex in nature" and are very dependent on the specific situation/environment in which they are present. These researchers state that an opportunity is formed when it is either created or discovered, and imply that an opportunity may "contain aspects that are both risky and uncertain." (Alvarez, Barney and Anderson, 2013). We embrace the aspect of the Discovery Theory, that assumes that "opportunities are objective and that the decision-making context within which entrepreneurs operate is risky" (Alvarez & Barney, 2007), and the aspect of the Creation Theory, that "assumes that opportunities are created by entrepreneurs through an emergent and iterative search process, and that the decision-making context within which entrepreneurs operate is either 'ambiguous or uncertain'" (Alvarez & Barney, 2007). After the combined analysis of the nature of opportunities and the characteristics of entrepreneurs to take them on, we assume that for this research the

formation of opportunities is not only dependent on the externalities but also depend on the unique capacity of entrepreneurs to form them.

2.4 The Formation of Opportunities

Alvarez and Barney (2007) have proposed that it is more pertinent to examine the differing qualities of the creation and discovery theories of opportunities, as they both have important implications that can help to interpret how "entrepreneurs can effectively explore and exploit opportunities" (Alvarez & Barney, 2007).

Prior to Alvarez, Barney & Young (2010) and Alvarez, Barney, & Anderson (2013), the nature of opportunities, their formation, and their relationship with the processes of how entrepreneurs explore and exploit opportunities was very scattered (McMullen & Shepherd 2006). They contribute to the field of entrepreneurship by providing an explanation of the entrepreneurial process as a sequence that starts with the formation of opportunities. Their work focuses on distinguishing between the discovery and creation of opportunities and their subsequent exploitation to build up innovation-based businesses. Their research attempts to solve theoretical and empirical questions for innovation and entrepreneurship, but as far as our review of literature has uncovered, their research also puts forth questions that remain unanswered. This has given rise to many potential avenues for the further study of this topic. It has been suggested by Alvarez, Barney & Anderson (2013) that "the organizational processes used by firms to discover or create opportunities may not be the same, and that this idea should be given further consideration"

The major drive behind this thesis is based on the future research suggestions found in the papers of Alvarez, Barney & Young (2010) and Alvarez, Barney & Anderson (2013) whereby they feel that it is imperative to examine the relationship between created and discovered opportunities, whether one can predict the other, and whether aspects of creation and discovery can coexist within the formation and development of a single opportunity. Their questions lean towards a new concept whereby, for the exploration of an opportunity to occur, an entrepreneur must simultaneously engage in both creation and discovery decision making processes (Alvarez, Barney & Anderson, 2013).

2.5The Process of Exploration for Opportunities

When a new startup, that has not had ongoing business before, is aiming to become ambidextrous they inexorably need to first explore opportunities that later can be exploited (March, 1991, Junni et al. 2013). Concepts of opportunity and the entrepreneurial process were together studied by Shane (2000), who put forward a description of what occurs during the exploration process. He presented the idea that technological inventions may exist or be on the verge of existence, and that prior knowledge leads the entrepreneur to recognise the opportunity and the approach that must be taken to exploit it at a later stage. (Figure 3).

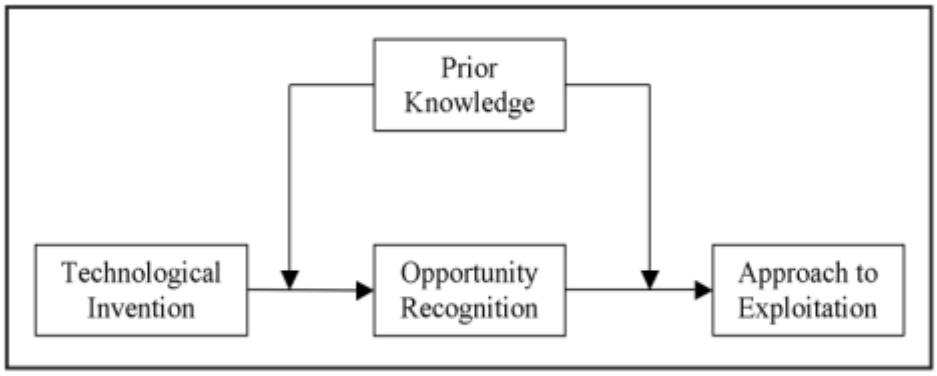

Figure 3: Shane's Conceptual model of the Entrepreneurial Process (2000)

On the other hand, Vanevenhoven and colleagues (2010) split the process of formation of opportunities in two, the generation and then the development of these, breaking down generation into two possible avenues: Discovery and Creation of Opportunities (Figure 3).

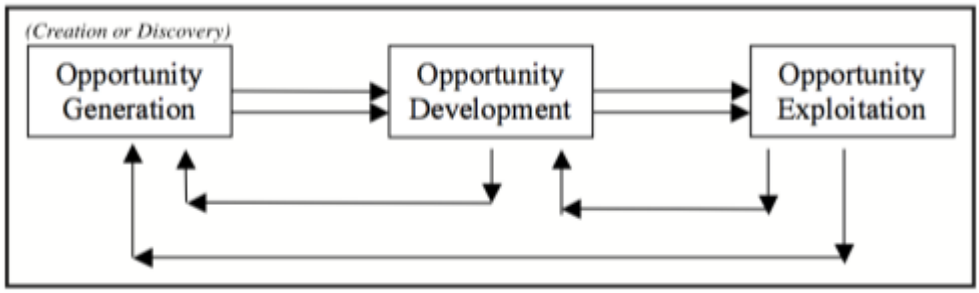

Figure 4: Vanevenhoven et al. Entrepreneurial Process (2011)

Since our assumptions are that exploration efforts should be put as the core focus in the organizational operations to innovate, startups need to count with an optimal way to mitigate the high levels of risk and uncertainty associated with this process (Bailey, 2013). Additionally, startups have limited resources and therefore seek to spend the least amount of resources exploring for opportunities to innovate (Senyard et al. 2014). The best results obtained from an exploratory process are those with potential for opening entirely new

markets or introducing discontinuous technologies that fulfil a similar market need but employ an entirely new knowledge base (Schilling, 2012). Only after this is achieved, the structure of the company, its resources and operations, should quickly adapt in response to the introduction of the innovation into the market. When the organizational processes within firms converts from exploratory to exploitative activities, they start becoming effective at exploiting innovation to sustain a competitive advantage that secures economic wealth at a faster pace than any other company that represents competition, incumbents and new entrants alike (Raisch et al., 2009).

3 Methodology

The following chapter will be used to describe the choices made regarding our research objectives, method for data collection and selection of the sources for our primary data. When deciding upon the type of study we wanted to do, qualitative or quantitative we chose qualitative. This is because our study examines the natural process of opportunity formation and development (Suddaby et al. 2014). Furthermore, much of the prior entrepreneurial research has been quantitative, the most common method of data collection being surveys and questionnaires, which has resulted in findings like that of other fields like strategic management (Suddaby et al. 2014).

From our analysis of several qualitative innovation studies, the benefit of qualitative research is that new processes, theories and reasoning can come forward, since the method of collection can be exploratory, whereby the study does not need to be based on a theory for the research to take place. Further to this, the problem with much of the research within entrepreneurship being quantitative is that it restricts the possibilities of defining unique theories as related to the field. Instead, many researchers are adapting theories from other fields of social science and collecting data to explain the entrepreneurial actions that lead to innovation (Suddaby et al. 2014). With this research, although we will not be presenting new theory, we attempt to collect relevant qualitative data to explore and examine the applicability of theories of innovation and entrepreneurship, to the exploration for the formation of opportunities.

For this thesis, we wanted to attain the most useful data, therefore, it was vital to be critical when making the choice for how our research would be conducted. We approached our study

by following the framework for case studies as presented in Case Study Research (Yin, 2014). The case study was broken down into 5 key components. 1. The main research question, 2. propositions based on this question and 3. what our unit of analysis will be.

These three parts would prove to be important for defining what our preferred method of data collection would be. The 2 final components that Yin (2014) suggests as what makes up a well thought out research design is to 4. create a framework that links the theory and current literature with the data collected - Research Design, and to therefore 5. create a particular criteria to use when assessing the results of the research - Analytical Framework.

3.1 The research question

How can the formation of opportunities be identified in the exploration process of early stage startups in Norway?

Based on Case Study Research (Yin, 2014), when asking a 'how' question your research methodology will take the form of an experiment, historical account or case study. This study was designed to explore how researchers can use certain theories of innovation and entrepreneurship, to identify events of creation and discovery of opportunities, occurring during the exploration processes of the foundation and early stage of startups in Norway. The reason for asking a 'How' question is that what we are examining cannot be quantifiable as we are looking at a process that occurs naturally in different, but comparable situations.

3.2 The propositions

Proposition 1: Events related to the Exploration for Discovery of opportunities can be identified using theories of entrepreneurship and innovation that emphasize knowledge utilization.

Proposition 2: Events related to the Exploration for Creation of opportunities can be identified using theories of entrepreneurship and innovation that emphasize resource utilization.

The purpose of these propositions is to narrow the scope of the research done when attempting to answer the research question (Baxter & Jack, 2008). By keeping the focus of

our propositions within theory that we have examined it helps to make our research more robust and feasible to conduct, creating more definable terms by which you assess the primary data (Eisenhardt & Graebner, 2016).

Our propositions are presented in the frame of an inductive research without the aim to prove or disprove causality of a phenomena, allowing us to carefully examine the phenomena and the data collected from this process, conducive to finding an answer to our research question (Christiansen et al., 2016). We do this by constructing a model that aims to contribute to the overall research of opportunity formation we are conducting.

3.3Unit of analysis

In the case of this study, the unit of analysis is the founder/s of Norwegian born startups that have "successfully" generated an opportunity, whereby they have created a startup that has been externally validated by having received investment or been adopted as a preferred solution by customers. The founder/s were chosen to be our unit of analysis to better understand the tactics entrepreneurs employ when forming an opportunity, and the steps followed to validate the outcomes of having taken on such an opportunity. The level of analysis will be the Norwegian Tech Startup community.

The reason we have only focused on the founders of Norwegian startups that have obtained traction as our unit of analysis is because we are examining the complete process of the formation, development and validation of an opportunity. It was therefore irrelevant to examine startups that had not been successful in their attempts to progress from an idea to constructing a sustainable business model. We also base this decision on the fact that as we are doing qualitative research, we selected our sample of participants based on the "characteristics and relevance to the wider population" (Anderson, 2010). By choosing individuals that have successfully passed through their exploration process, we secure some of the richest and most valuable information about the Norwegian Startup Ecosystem for our study, therefore we can make our analysis more relevant while remaining reliable and focused on our research direction.

3.4 Research Design

3.4.1 Exploratory Multiple Case Study

Based on the case study framework as put forward by Yin (2014) and our predispositions to wanting to conduct and inductive research, we decided to make our study qualitative in the form of a holistic multiple case study (See Figure 5). The reason we chose to do a multiple case study over a single case study is because stronger claims can be made based on data collected from several sources, giving us the ability to examine both similarities and differences between cases, therefore making our dataset stronger and more reliable, and the clarification of whether our results are easier to surmise as valuable (Baxter & Jack, 2008, Yin, 2014). Further to this we are still able to analyse data within a single company (case) and cross reference this with our other cases (Eisenhardt, 1989; Rowley, 2002).

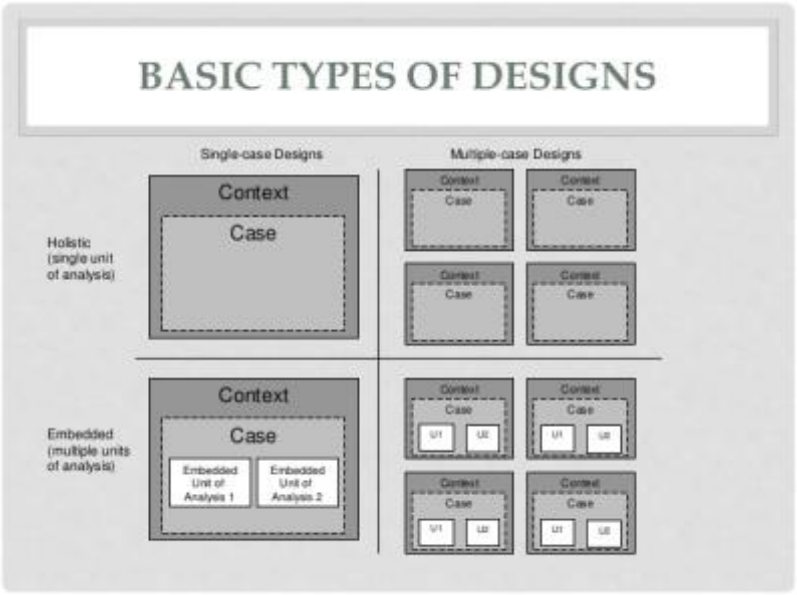

Figure 5: A description of the basic types of Case Study Design (Yin,2014)

The reason we chose to conduct an exploratory research was that we were interested in observing whether patterns would come forward when examining the multiple cases (Noor, 2008), offering an alternative perspective to what is currently prominent in the creation/discovery debate. Based on the startups that we have chosen to interview, all have achieved success in opportunity formation as determined by their ideas being validated in society.

3.4.2 Challenges with a holistic multiple case study

Choosing to do a multiple case study allowed us to explore our research question and propositions on a wider plain, as we are attempting to build upon the current opportunity based theory, it was more sensible to conduct a multiple case study over a single case study, as it would provide a stronger base for which we could build upon the current theory (Eisenhardt, 1989, with Graebner 2016). The major difficulty was that to secure multiple cases, required quite a lot of time and effort on our part, consequently, our period for data collection spanned longer than the one month we had dedicated to it (Appendix 1).
Due to time constraints, conducting a multiple case study, only allowed us the time to attain data from each case once, so that despite all attempts being made we could not go as deep into the study as one presumably could do examining a single case. However, by having a team of 2 researchers, we could effectively examine all the cases we had, in an efficient way to still achieve robust results. Being holistic means that we look at all the cases with one single unit of analysis–as mentioned previously the unit is the founder of the company. By its very nature, we can run into the issue of not assessing each of the subunits as is done in the case of an embedded design (Rowley, 2002). However, we found that a Holistic study would be more suited to our situation as it can give us a better overview of the whole theory (Rowley, 2002).

3.4.3 Challenges of an inductive study

To create a model based on current theory, an inductive study must be executed. This type of study is important for case studies as it connects "rich qualitative evidence to mainstream deductive research" (Eisenhardt & Graebner, 2016). It is the hope that building theory this way will produce more accurate and testable data (Eisenhardt & Graebner, 2016). To be of such importance to the overall development of a scientific theory, one can assume that it will also come with challenges. Our research question is an extension of the theory of opportunities as proposed by Alvarez, Barney and Anderson (2013), we therefore had to frame our question so that it was presented as complementary to their work, showing why it is important, and necessary for us to build upon what they have presented (Eisenhardt & Graebner, 2016). Further to this, as we wanted to add to this theory, it was vital that the cases that we chose could offer rich and valuable data regarding the process of opportunity generation and development, that would not be as attainable via quantitative research methods (Eisenhardt & Graebner, 2016).

3.4.4 Secondary Data Collection

We began collecting secondary data by conducting a thorough review of the current literature, initially focusing on the different research articles that had been presented to us throughout this Master's Program. This was done both via google scholar and our school database (Oria). The most important theories and interpretations of theories based on the literature we read were presented in our Literature Review Chapter. We decided to only focus the collection of data on the organizational processes that startups use when exploring for discovering or creating opportunities.

The paper presented by Alvarez, Barney and Young (2010) defines the exploration phase at such an early stage of a company as the process of opportunity formation. This realisation triggered our interest in making the identification process of the nature of opportunities, more straightforward. Furthermore, it encouraged us to look deeper into opportunities to find other researchers that had proposed theories for the process of opportunity formation. We found other papers that had cited their research and examined further the literature they had used as references.

After analysing these papers, it was decided that the remainder of our research would be based on defining an original process of exploration based on the processes presented by Vanevenhoven and colleagues (2011), and Alvarez, Barney and Anderson (2013). In both papers, opportunities owe their existence to competitive imperfections as defined in traditional and epistemological research on opportunity. We decided to look for specific events or milestones resembling the creation or discovery of these opportunities, subdividing the exploration process into three stages: Ideation, Iteration and Validation.

Since we wanted to identify the events that lead founders to take on the opportunities, we were also interested in gathering secondary data about current theories of innovation and entrepreneurship. We looked between them selecting which of these theories was useful to identify events that could be directly linked to the discovery and creation of opportunities during the exploration processes of startups.

Once we had assessed the current literature and formulated an initial framework, we conducted background research on each of our cases (the entrepreneurs and firms that they represented). This work consisted of searching for any press releases regarding the companies

or the founders as well as going through LinkedIn profiles, social media pages and company websites.

3.4.5 Primary Data Collection

Our primary data collection involved conducting semi-structured interviews with 11 Norwegian born product and service companies within the tech industry. We chose each of these 11 companies (cases) based on purposive sampling. As described by Anderson (2010), this is "common in qualitative research. Particular individuals are chosen with characteristics relevant to the study who are thought will be most informative." We also strived to produce maximum variation within a sample seeking similarities between the cases, despite being present in different fields within the tech industry. As such the aim of our dataset was to produce a literal replication, whereby we would attain similar results between case (Yin, 2014).

3.4.6 The Selection of our Case Studies

The Entrepreneurs that make up our dataset were chosen based on the knowledge we felt that we could extract from their insights into the formation of their company, and as such we managed to meet with some very impressive individuals both in the Norwegian community & Globally, whom are, in some cases, global leaders of their field.

We were very cautious when deciding which cases to choose, basing our decisions not on the innovativeness and success the companies currently have, but rather in that we were trying to assess and develop a framework to examine how companies form opportunities to become more innovative in their early stages. As such we only approached those founders whom we empirically knew had successfully validated their concept, either by receiving external investment, or having customers adopting their product or service as their preferred choice. By doing this we were attempting to counter the issues associated with the "appropriateness" of the dataset to the overall research (Kuzel, 1999 cited in Shakir, 2002). To attain an "adequate" (Kuzel, 1999 cited in Shakir, 2002) amount of data we approached more than the 11 cases that we managed to interview. In certain instances, the founder was unable to meet with us, mostly due to time constraints, this can be expected as the company's/founders we approached were successful in their attempts of innovation, some of which had only recently achieved validation and as such were very busy at the time of our proposed interview period. Despite this the size of our dataset was still sufficient to produce reliable data (Yin, 2014).

We contacted each interviewee via an array of sources, some we were put in touch with via our thesis supervisor or other people within our network, we also 'cold called' several individuals via email, Twitter, Facebook and LinkedIn, and some of our interviewees put us in touch with other entrepreneurs they felt were fitting to our research, based on the interview they had with us.

3.4.7 Background of our Interviewees

When deciding on which founders to contact we set up a criteria that we checked against each potential interviewee. As stated above only 'successful' companies were approached; Each of the companies had to be founded within Norway (preferably Oslo - so that we could more likely meet with them in person), with the exception that they can still have an international presence; and they had to be within the tech industry offering either a product or a service. The reason for this is that much of the literature that we assessed with regards to the exploration of opportunities had a focus on the tech industry (e.g. Vasilchenko & Morrish, 2011; De Jong & O Marsili, 2011), this was made more concrete by the simple fact that we were better equipped to connect with tech companies due to our proximity to tech startup incubators, such as StartupLab. By keeping to our criteria, we increased the chance of having data that would produce literal replication, and by this criterion we also managed to secure interviews with some of the most prominent profiles within the Norwegian tech industry (Appendix 2).

3.4.8 Assumptions about reliability of Data

As we were examining a contemporary process, it is suggested that the most effective way of gaining reliable data is through verbal communication, i.e. an interview (Wilson, 2010). Conducting an interview enabled us to probe the subject for the required information, based on the answer they gave, something that can be done less effectively via other methods of data collection. In addition to what Wilson (2010) recommends, it is suggested that the recording and later transcription of these interviews is vital for maintaining the reliability of your analysis. After receiving permission from each of the interviewees, we recorded the audio from the interviews. This method allowed us to stay focused on what the interviewee is discussing so that probing questions can be asked when necessary to attain important information pertinent to the overall research, this also allowed the flexibility of being able to go back through the interviews and transcribe later.

As we transcribed each interview we categorised the answers of the interviewees based on the coding categories (presented in the Analytical Framework chapter) that we created prior to the interview sessions. To maintain reliability of data throughout the interview process we took several precautionary steps as was suggested by Wilson (2010). By interviewing several different companies, we increased reliability through being able to cross-reference our data with several cases. This improved the likelihood of finding a recurring theme that could be related back to the literature we had reviewed. The founders we interviewed were asked to recall milestones and events that had happened sometime in the past. In this sense, this study would have been best done over a longer period. However, due to our time constraints, prior to conducting each interview we asked that the interviewee bring referencing tools, prototypes, business model canvases or other project plans to the interview. This technique was used so that if necessary, it would be easier for the interviewee to recall certain aspects of the exploration phase.

By only choosing firms from which founders we knew were in Norway, Oslo, we had the risk of acquiring convenience samples (Anderson, 2010). Convenience samples are those when the researcher chooses cases based on the ease at which they can be reached (Anderson, 2010). We mitigated this by only approaching those firms that had proven their success, and as such this meant that in general they were more difficult to acquire, as opposed to basing our selection solely on the geographical location of firms in the Oslo region. The reason we did not want to fall into this trap was to avoid making our samples unrepresentative of the greater population of entrepreneurs in the tech industry.

3.4.9 Assumptions about Validity of Data

To create a quality research, it is imperative that you show both internal and external validity, as well as construct validity and reliability (Yin, 2014). External validity refers to the extent to which the findings of the research can be generalizable to a wider audience. Internal validity refers to the ability to show a causal relationship between the collected data and current theories. Construct Validity refers to the overall design of the research that it is correct and the methodology used is in line with the concepts being explored.

As we attempt to examine only Norwegian born startups within the tech industry, there is a limit to how generalizable our data can be, as we are attempting to conduct an exploratory research we found it less necessary to have external validity, as this is more pertinent to

exploratory studies (Yin, 2014). We tackled the issue of internal validity by striving to only examine similar cases so that we could create logical replication and limit the number of differing variables we would need to otherwise include. Before conducting any interviews, we made sure that we examined the current opportunity based theories and all underlying theories as carefully as time and our deductive skills would permit, we then laid out a timeline of events to keep on track with our research (Appendix 1) and adhered to it as much as was possible. Further to this as we progressed with our research, we had frequent and consistent meetings with the Supervisor of our research to go over our progress, and discuss potential flaws or aspects to focus on. In addition to this we received advice from several other academics in the field of innovation and entrepreneurship.

To improve the validity of this study we attempted to achieve data triangulation as is explained in Yin (2009) as the process of achieving data confirmation from several sources (2 or more). In addition to interviewing the founders we also examined their company's profiles, their own LinkedIn profiles as well as any other articles that were regarding the founder, the company or both. We also requested that any prototypes, business plans or other information relevant to the development of their company be brought to the interview, so that it could be examined alongside what was being said by the interviewee. An issue that we were aware of, regarding backing up our primary data, was that gathering background information on the companies and founders being done via Social Media, LinkedIn and other information online, may not always be reliable as these channels are generally used as a promotional and recruitment tools. As such most the information found there is skewed in favour of the company or individual it is with regards to. We mediated the risk of this occurring by cross referencing profiles with press releases and other online data.

An issue that is experienced by researches of all levels is 'Confirmation Bias's' (Yin, 2009). When a researcher tends to interpret the data, they have collected as confirmation of their existing beliefs or theories (Yin, 2009). To avoid this, we made sure to research a considerable range of literature on the formation of opportunities and theories of innovation and entrepreneurship, so that we could ascertain the best ideals for constructing the analytical framework for our innovation model.

4 Analytical Framework

In this chapter, we present how we divided the exploration process into 3 stages, subsequently identifying how the discovery and creation of opportunities was not only present in the generation of an idea but also during its development and further. We do this by identifying events related to the formation of opportunities present in the data collected, based on their definition in literature and our interpretation of. We then employ the theoretical lens made of extracted elements from theories of entrepreneurship and innovation to examine the process of exploration for creation and discovery of opportunities. In this chapter, we also show how we extracted elements from these theories and coded them in categories for analysing the qualitative primary data collection.

We decided to look for specific events or milestones resembling the creation or discovery of opportunities. Similarly, to Alvarez and Barney's (2007) creation and discovery theories that are applied in the analysis of three entrepreneurial phenomena: entrepreneurial decision making, the business planning process, and the decision to finance entrepreneurial ventures, we subdivided the exploration process into three stages: Ideation, Iteration and Validation. Alvarez and Barney's research generated "very different insights with respect to these three phenomena", suggesting that the theories of Creation and Discovery are complementary rather than contradictory. Likewise, we wanted to find that the exploration process exhibited events associated to both theories rather than belonging just to one approach of the two. These events unleashed by decisions and actions of the founders can be associated to both discovery and creation depending on the aspect of the innovation theory that could give an explanation to the event.

4.1Our Three Stages of the Exploration Process

In our thesis, we want to describe that founders don't start with a focus on exploitation, since there is not a product yet to exploit. They also don't usually assume that incremental innovations are enough to obtain profitability in such an early stage. Therefore, they aim for higher returns exploring opportunities and increasing their adaptation to the demands of the market. By enhancing the effectiveness of the methods employed in explorative activities, these founders ultimately are lead to discovering or creating opportunities for radical innovation. As such, with our research we aspire to generate a reference tool for other

entrepreneurs by mapping the exploration processes and the knowledge of companies that have been successful in introducing innovation as technology startups born in Norway.

In this study, we differentiated three stages of an exploration process towards innovation. First is Ideation, the process of generating the initial idea that sparks the entrepreneurial spirit of the founders. Second, the process of iteration of prototypes. The construction of one or more early versions of the product as prototypes can start from ideation, but as this part of the exploration process is inherently iterative, startups can sometimes present multiple cycles exclusively to test the interest of the market and create small gains or failures that the founders are able to replicate or learn from. Lastly, Validation is the part of the exploratory process of a startup that defines if a version of the product fulfils its intended purpose and receives the minimum acceptance by the market or support from investors to scale its production or distribution for commercialization purposes. The culmination of that third phase marks the start of the exploitation process as represented in Figure 6.

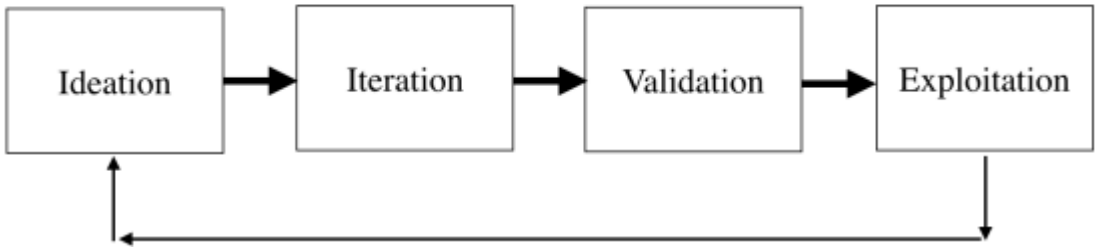

Figure 6: the process of Exploration

After we decided how to subdivide the process of exploration, In Figure 7 we compared the way it can be presented together with other theories that describe the exploration phase during the entrepreneurial process. Specifically, the ones that are based on the reviewed literature pertaining to the epistemological traditions and studies about opportunity. The positioning of the line of each of these theories acts as a representation of how close each theory brings the exploration process to the point of Exploitation.

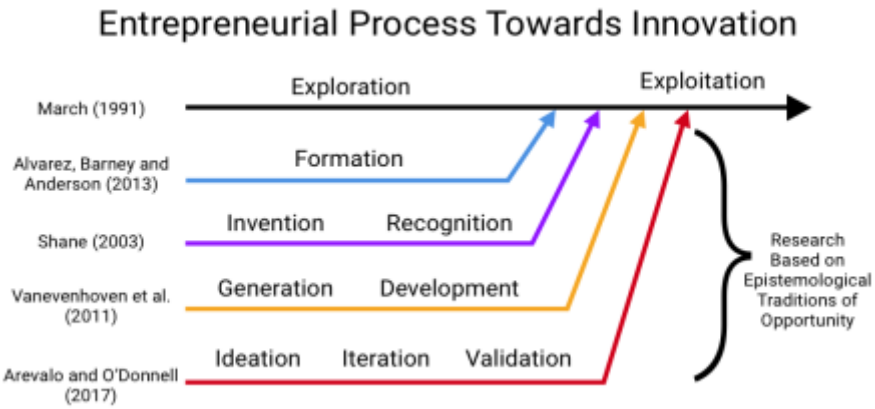

Figure 7: Our conceptualization of the exploration process

4.2 Our Theoretical Lenses

Our analytical framework considers the complementary nature of opportunities (Creation or Discovery) and how founders generate them along the exploration process. To identify events related to their formation, we find useful the contribution from different theories of innovation and entrepreneurship, to explain the phenomena that determines why some companies can be more successful going from idea to business in their founding stages. For examining the events occurring during the generation and development of opportunities, we take two of such theories and link them with the formation & development of opportunities. Jobs To Be Done Theory(JTBD) defines that products or services are "hired" by consumers to solve their needs in different circumstances, allowing them to make progress in a situation (Christensen et al. 2016). Conversely, the theory of Entrepreneurial Bricolage involves using the resources you have available in innovative ways, particularly when in a resource constrained environment (Levi-Strauss, 1967). We recognized the enormous capacity of these theories to examine the exploration process of each company during their startup phase, and welcomed their potential to identify the nature of events due to the complementary characteristics of their theoretical lenses. Based on our own interpretation of the available literature in these topics, we link elements of the JTBD theory to the discovery of opportunities and entrepreneurial bricolage to assess those actions directed toward the creation of opportunities.

From this point onwards we will use aspects of Entrepreneurial Bricolage and JTBD theories as a common language in which we explain the implications of actions taken and decisions made by the founders of a firm that aid them in the formation of opportunities.

4.2.1 Jobs-To-Be-Done

Jobs-To-Be-Done (JTBD) was recently presented as a theory for innovation (Christiansen, et al. 2016), but it has been developing alongside the fields of marketing and business strategy for many years. As such, JTBD has less available literature regarding how it could be associated with the formation and development of opportunities. Therefore, we found it necessary to cross-examine this theory with current opportunity literature to find several connections. According to Harvard Business School professor Clayton Christensen, and many other thought leaders of the "Jobs" theory (Christensen et al. 2016), customers aren't interested in products or services themselves, but in what they do to allow progress. A "Job" is defined as the need or set of needs that a person has, to make progress in a circumstance. Products or services are simply "hired" to get the job done. In this definition, the word "progress" represents "movement toward a goal or aspiration." Additionally, the word circumstance defines that such progress rarely happens as a single discrete and isolated event, but that it is relative to the specific context in which the person has a problem and the struggle it entails. Most of the time, such a struggle has not only functional, but also social and emotional dimensions. "When you identify the struggle to make progress, you can begin to infer not only the practical, but the critical unseen or unspoken social and emotional dimensions of the Job to be Done." (Christensen et al. 2016)

In this regard, a successful product or service can only arise as a solution when it's offered to cover the full complexity of the "Job" offered. A useful analogy is to imagine that the product/service is being interviewed, and the consumer is taking the position of an HR manager. People are constantly in this position, wondering about the reasons why they would "hire" a product and how better it could perform in comparison to other candidates such as competitors, substitutes or even the possibility of not consuming the product at all. A person offering a product or service, either as a manager of a big corporation or the co-founders of a new startup company, should consider that innovation cannot be obtained by only focusing on customer characteristics, product attributes, trends of new technology or the competitive response in the market. These four organizing principles are "sampling of the most common" and therefore, as a result is insufficient to predict customer behaviours. In this sense, the theory of Jobs-to-be-done "provides a powerful way of understanding the causal mechanism of customer behaviour, and understanding that, in turn, is the most fundamental driver of innovation success." (Christensen et al. 2016)

In this thesis, we incorporate JTBD to analyse certain events and some of the results that startups have during exploration. Furthermore, we consider very useful a theory that explains why customers "pull" certain products and services into their lives. The purpose of the JTBD theory is to bring more predictability to the innovation process by methodically analysing the value proposition of the product or service that the startup will offer to the user. When we see that the actions, decisions and vision of founders are guided by the JTBD theory to discover opportunities in an effective way, we assume that it allows them to maximize the utilization of their knowledge and mitigate the risk and uncertainty of exploratory practices. In this case, the "job" presents traits that resemble the theoretical components of an opportunity, that's why it might not be surprising to see that Christensen in his book Competing Against Luck (2016) says "it's important to note that we don't 'create' jobs, we discover them."

4.2.2 Entrepreneurial Bricolage

Finding prior research relating Entrepreneurial Bricolage to opportunity creation was straightforward as Bricolage has been thoroughly examined in the field of entrepreneurship since Levi Strauss first presented it in 1967.

The term "bricolage" can be defined as "making do by applying combinations of resources at hand to new problems and opportunities" (Baker & Nelson, 2005). This suggests that an entrepreneur can create something innovative and new by recombining the resources they already have available to them or that can be acquire for free or inexpensively (Vanevenhoven et al., 2011). By making do with what you have available, a bricoleur can be labelled as a person of action who will execute with what they have at the time, giving rise to novel and innovative products. They possess "the ability to combine existing resources and using them for purposes they were not originally designed for." (Turturea et al. 2014). This also suggests that a bricoleur will not back down from new challenges and will not limit their opportunity generation to a field for which they are familiar (Venkaaraman, 1997). It is often this willingness to enter into a foreign industry that the bricoleurs can attain the kind of innovation described by the concept of "creative destruction" (Cunha, 2005).

Baker and Nelson (2005), suggest that by using the resources at hand, the entrepreneur can create breakthrough innovations as they are forced to think outside of the common practices present within an industry. By being able to create 'something from nothing' (Baker & Nelson, 2005) the process of bricolage is particularly pertinent to startup firms that have little

or no resources or credibility within their proposed industry (Baker & Nelson, 2005, Garud & Karnøe, 2003, Senyard et al., 2009).

Due to the fast-paced lifestyle that ensues with a startup, there is a tendency to overlook the potential for the resources they have available to them. It is through being creative in the way they implement these resources that entrepreneurs can create opportunities for their business to grow. This differs from traditional linear social planning and focuses instead on social design processes, by taking what was once considered a slack resource of no value and manipulating it to becoming socially constructed to be valuable (Alvarez, Barney & Anderson, 2013).

4.3Process of Analysis

To attain the richest information from every interview we processed them in 5 stages. Although this was a time-consuming ordeal, we found it to be necessary to assure that our inductive study produced robust results.

The first stage was transcribing the interviews so that we could better analyse the data.

Second, we compared the transcripts (Appendix 6) against our coding themes so that we could analyse the interviewees answers based on theory from the literature we had reviewed– at this stage we employed a colour coding method so that the extracting information and quotes for the results and discussion would be simpler.

Based on the coding of the transcripts (Appendix 6) we created a set of tables (appendix 3-5) that showed instances in which one of the codes occurred during the interview, separated into our 3 stages of exploration.

The fourth stage involved us once again listening to the recorded interviews and creating an opportunity timeline (Figure 10, 11 and Appendix 7) regarding what we heard and what we had categorised in the transcripts (Appendix 6). This stage was vital as we were looking at a process over time and therefore a visual depiction could help us to better explain and notice similarities and differences in the final stage of analysis.

Our fifth and final stage of analysis was to compare our coded transcripts (Appendix 6) and timelines across all the cases, to observe whether our data produced literal replication or theoretical replication–when the results were contrasting across cases (Yin, 2014).

Both authors of this thesis went through each stage of the interview analysis process to ensure a stronger chance of reliability and trustworthiness. By doing this, we resulted having a good number of discussions regarding which coding categories were better suited to different aspects of each interview. Disparity in our discussions was resolved by going deeper into the transcription of the interviews and the analysis of the complementary literature, strengthening the overall case and analysis of results.

4.4Coding Categories

In our research, we look for patterns in our primary data that we can associate to our theoretical frameworks to solve empirical questions that address the nature of opportunities in entrepreneurial and innovative environments. To do this in an efficient way we came up with a set of codes based on the literature we reviewed prior to conducting our interviews (Figure 8). At this stage, we applied an a-priori method of coding (Wilson, 2014).

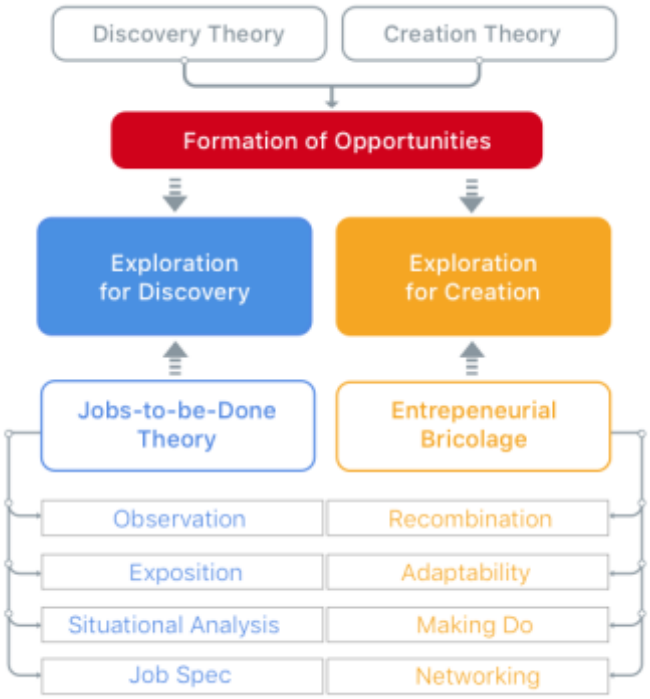

Figure 8: A presentation of the codes used to analyse primary data

Jobs To Be Done

Our theoretical framework to identify events in which founders were contributing to the discovery of opportunities is fundamented on four parts extracted from the JTBD theory: exposition, observation, situational analysis (Klement, 2014) and the "Job to be Done" in the form of a specification denominated “Job-Spec” (Christiansen et al. 2016). We broke the theory of JTBD into these 4 coding categories and used them to examine the process of exploration of each company that goes through ideation, iteration and validation. We also employed this coding based on the JTBD theory for generating the questions to be used in the interviews.

Exposition: Using the knowledge of the context around the customer struggle to comprehend the who, what, when and where, without paying attention to the why. This is present when the founder has experienced the problem themselves or has seen other people experiencing a problem.

Observation: Using the knowledge of the current and past users' behaviours for understanding which product or services they're using. This is present when the entrepreneur discovers pre-existing behaviours from a market in which a product or service has been built upon and recognize their limitations. This can be achieved by watching what people are doing now to progress in a situation.

Situational Analysis: Using the knowledge of the situation in which a solution needs to be present for understanding how to address the motivations and anxieties of the users. The founder executes this analysis by explaining the challenges that customers are facing and examining the experiences they have pushing them to or from different solutions to their problem.

The Job Spec: Also present in the form of job stories that describe what should be accomplished by the user at a high level. It is the compendium of the knowledge obtained from the previous three coding categories to understand what the solution provides to help the user make progress. The Job Spec involves the functional, emotional, and social dimensions that define such desired progress. This level of specification gives a clear recognition of the outcome that the user is looking for when deciding to choose a product or service and therefore is useful to tailor an experience that matches their expectations.

Usually, the founders hold a definition of this job-spec subconsciously, making part of their vision, defining their judgment about opportunities and helping them make decisions or take action regarding the design, development and commercialization of the product or service.

Entrepreneurial Bricolage

When examining how we would adapt the theory of entrepreneurial bricolage into our interview protocol, we first examined how previous researches had gathered data on bricolage. Most the results (eg. Senyard et al. 2009; Baker & Nelson, 2005) were obtained via surveys completed by Top Management Teams of SME's within resource constrained environments. From these surveys, it was possible to ascertain common themes that were often probed by these researches, and that could be backed up by the theory put forth. It was then a matter of adapting this quantitative categorization available to be used in our qualitative study. The resulting themes that emerged from this analysis were: Adaptability; Making Do; Recombination; and Networking. As is the case with much of the theory around bricolage, we found that all 4 of these coding categories were closely intertwined and often were the cause of each other.

Adaptability: Active engagement and integrative thinking of the entrepreneur. Customizing and adapting to the needs of the market by the process of anticipation and response. We use this code in instances whereby the interviewee would change their approach or pivot to meet the needs of their customers, or a changing market. The ability of the entrepreneur to connect with their resources, having a deeper understanding of the value, and see the potential it has to change the game. Also present in moments where interviewees interpret their situations based on previous experience.

Making Do: executing with what you have right now, improvisation and risk taking behaviour. We applied this code in situations whereby the interviewee would execute on a prototype or decision despite knowing that it might not be the optimal solution.

Recombination: Bringing resources together in a novel and innovative way. We used this code in situations whereby the interviewee applied 'random' sets of resources or situations and combined them to benefit along his entrepreneurial path.

Networking: Often the resources that researchers refer to in Entrepreneurial bricolage are those obtained via the entrepreneur's networking skills (Baker et al., 2003). We used this code in situations where the interviewee relied on an individual either connected within or outside of the company to overcome resource constraints and progress with a resulting favourable formation of an opportunity.

4.5Interview process

The purpose of conducting semi structured interviews was so that we could maintain reliability (Miles et al., 2014; Baxter & Jack, 2008). Being semi-structured we approached each interview differently, based on our knowledge of the interviewee, their company and the time frame they gave us, we could effectively adapt the framework of our interview to obtain the necessary information we required. Prior to conducting our interviews, we created a set of a-priori coding themes (Figure 8) related to the important elements of JTBD and Entrepreneurial Bricolage as is relevant to opportunity generation. The resulting interview questions (Appendix 6) were based around each of these themes, were refined after our pilot interview, and altered for every subsequent interview depending on the conversation flow. Except for the co-founder of FlowMotion, whom we spoke with over skype (due to the geographical logistics), all interviews were conducted in person.

4.6Collecting Valuable data

When going into each interview we kept in the back of our mind a few 'traps' to look out for. We had previously observed from seminars, podcasts and pitches, that quite a number of our interviewees were very charismatic and talkative, most likely as a result of having pitched their company so many times. Although we tried to get answers based on what we needed, there were many tangents taken during the interviewing process. Despite the talkative nature of these individuals we managed to have the interviews run for between 35 and 50 minutes (Appendix 2).

Prior to commencing each interview, it was requested that the interviewee consent to the audio be recorded so that no valuable data would be overlooked. To set the tone, every interview began with us explaining a little about JTBD and Entrepreneurial Bricolage theory and how we wanted to look at the process of exploration as related to the process of opportunity formation and development - Ideation, Iteration and Validation, this was so that

we could build rapport with the interviewee, showing them that our research could have real applications. By going deeply into presenting our research topic and the theories behind it, we were able to direct the conversation flow in a way that was more pertinent to our research. However, the drawback of directing the conversation in this way is that the interviewees may have diminished the richness of their answers based on what they knew we were looking for.

In order to start off light we asked a simple question so as to 'Break the Ice,' making the interviewee feel comfortable and therefore more willing to share their experience with us. We initiated the questions by asking the interviewee to tell us a little about what their company does. How they came about the idea for the startup and whom was involved in this process.

Each question was simple and open ended, and for each question we had a set of sub probing questions that could be asked if we felt that we needed more information regarding the questions topic. Other 'traps' we kept in mind were that entrepreneurs can often romanticise their stories so that their efforts and progression can seem more awe inspiring, this can often times not be helped, however, we attempted to navigate around this by making our questions simple, and often iterated their success so that they didn't need to. We still analysed the results of each interview with an objective mind-set so that if embellished stories were told in their answers, we could still extract quality data from them.

4.7The Pilot Interview

Conducting a semi-structured interview can potentially leave the researcher with many unanswered questions and ineffectual data. It is therefore prudent to conduct a pilot study so that the process can be finely tuned (Wilson, 2014). We conducted our pilot interview with Socialboards for the main reason that we knew a lot about them and their story having previously interviewed them one time before. We therefore saw them as a good candidate for refining our questions, the flow of our interview, and techniques used for helping the interviewee to recall events, as we already had a sound knowledge of what their process had been and therefore could ascertain when our questions were less fruitful. Despite conducting this interview as a pilot, we received good data that we felt would be able to contribute to our main data pool. In addition to attaining this data we learnt more about how to present our questions and how best to have the interview flow smoothly. We got a better insight into how entrepreneurs think and act in interviewing circumstances. the strength of our insight was

improved in relation to previous interviews and conversations that we had conducted with entrepreneurs.

Another key aspect that came out of this first interview was that we noticed a 3rd entrepreneurial theory developing from the founders of Socialboards story. Initially we had imagined that we would be able to examine the discovery of opportunities by adapting key concepts of the Jobs-to-be-done theory, and the creation of opportunities through Entrepreneurial Bricolage. However, from our analysis of our pilot we adopted the theory of Entrepreneurial Networking to explain the acquisition of both resources and knowledge. By introducing this third theory we now found a more plausible method for explaining how the exploration for discovery and exploration for creation could be intertwined within the generation, development and confirmation of an opportunity.

By accepting this third theory into our analysis we also effectively altered our method of coding from a priori to emergent, as we would now adopt new codes upon examination of the data in the subsequent interviews, this method is considered more applicable to our study being inductive (Wilson, 2014).

4.8Emergence of Networking theory and Third proposition:

Networking theory is still fairly young when relating it to startups and SME's, only really emerging as a topic of interest within entrepreneurship studies over the last 3 decades (Hoang & Antoncic, 2003). In part, we believe that this is due to the fact that organisations like startup incubators; events and founders funds are also a fairly recent development. As such networking was more of a private occasion, not as public as it is these days. However, needless to say that when it comes to startup organisations with little resources, both internal and external, the ability of an entrepreneur to network effectively is key to growing their business, and competing with bigger organisation that have the resources to create external connections when necessary (Rothwell, 1991). Many researchers agree that networking is vital to increased firm performance. Firms that have extensive networks have a higher propensity to innovate and make more strategic partnerships (Pennings & Harianto, 1992). Hoang & Antoncic (2003) focus on networking within the tech industry stating that "managing innovation, particularly in high-tech firms can be linked to uncertainty, and

networking works to gain access, both to resources as well as to legitimising the tech" (Hoang & Antoncic, 2003).

Originally we had Networking as a code in bricolage, however upon seeing the instances in which networking was used in our pilot interview we felt that it was important to further analyse this as a stand-alone theory as opposed to being part of bricolage. By doing this we saw that networking is not just a technique for acquiring needed resources and skills but also for the acquisition of knowledge. In this sense, we break networking down into two coding categories so that one falls under the exploration for discovery and the other under the exploration for creation, we name these two new codes Networking for knowledge (Discovery) and Networking for resources (Creation).

Networking for Knowledge refers to instances when the founder utilised their networking skills and network in order to attain new knowledge required to progress with the business, either them personally or by meeting another individual; skills or attained knowledge or experience as a direct result of their efforts for networking.

Networking for Resources refers to instances when the founder utilised their networking skills and network to gain funding, resources (Materials), tools and people with particular skillsets to be used during execution to overcome a situation of uncertainty. In later stages of startup companies, networking is used to receive more capital or achieve more publicity. This code is not used to explain how the resources are used, rather just how they are gathered.

With the introduction of a theory that can be applied to both the creation and discovery of opportunities, we decide that it is important to not move the scope of our research out of our quest for resolving our research question and so we introduce a third proposition:

Proposition 3: Certain theories of entrepreneurship and innovation that emphasize the acquisition of knowledge and resources can provide a framework to identify events of exploration for either the discovery or creation of opportunities.

By introducing Networking into our framework we are also able to create a more concise diagram that depicts the theoretical model while being built and allows to visualize the scope of our research. (Figure 9).

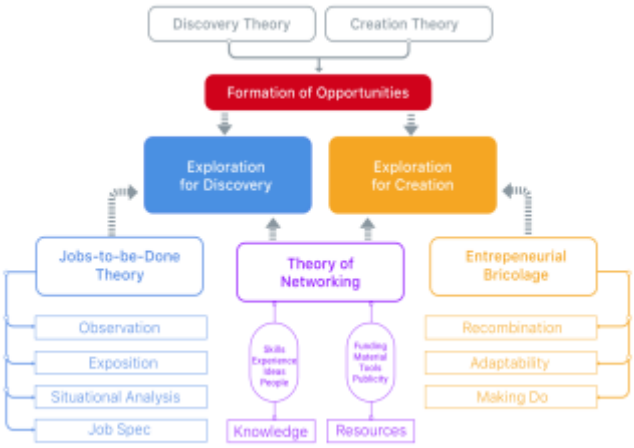

Figure 9: Our theoretical model of emergent coding categories

4.9 Conceptualisation of our analysis process -The Timeline

Certain events contribute to the formation of the opportunity through ideation, iteration and final validation of a product by the market or investors. To organize the data collected and visualize it as a timeline, such events, that correspond to either creation or discovery activities, are mapped to each side of the Y axis respectively. The Y axis is split right in the middle by the X axis so that we can represent exploration for discovery on the top and exploration for creation on the bottom. Instances of either discovery or creation as identified with our coding categories are represented along the X axis which has been separated into the three phases of the exploration process according to how entrepreneurs progressed forming their respective opportunities.

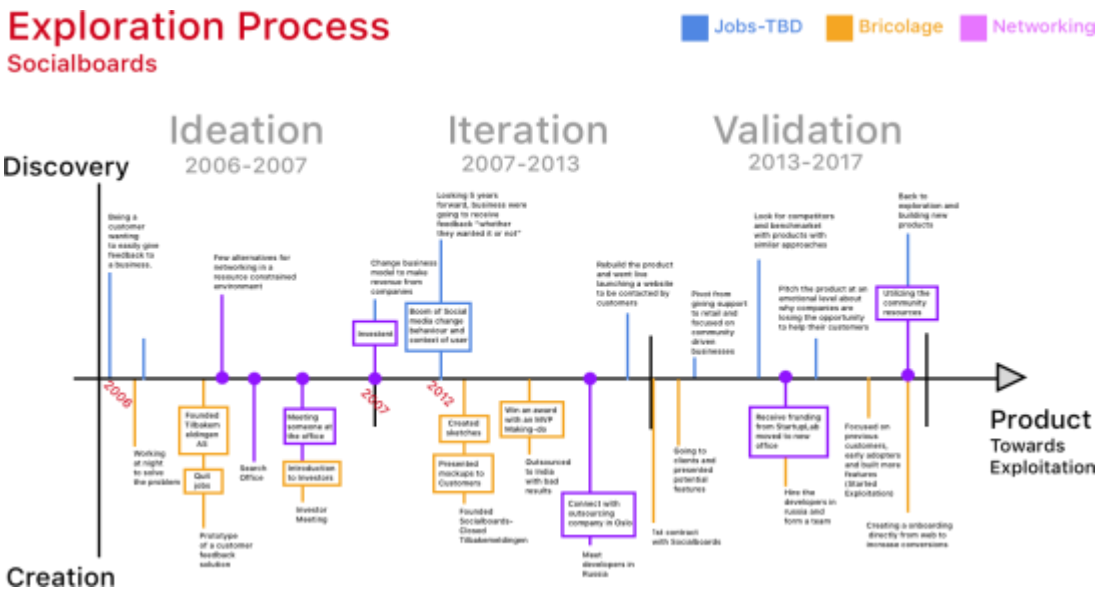

Figure 10: A timeline for identifying the formation of opportunities: Socialboards.

The timeline that we created (Figure 10) was as a result of examining the exploration process of Socialboards as they were our pilot. We created many drafts of this timeline in order to accurately depict events, activities and periods that we could classify as either Entrepreneurial Bricolage, JTBD or Networking. However, we finally agreed upon the model seen in Figure 11 as previous models were less insightful to the actual classification of events and therefore more difficult to interpret. Figure 11 is a representation of the same timeline that was visualized from our pilot interview with Socialboards.

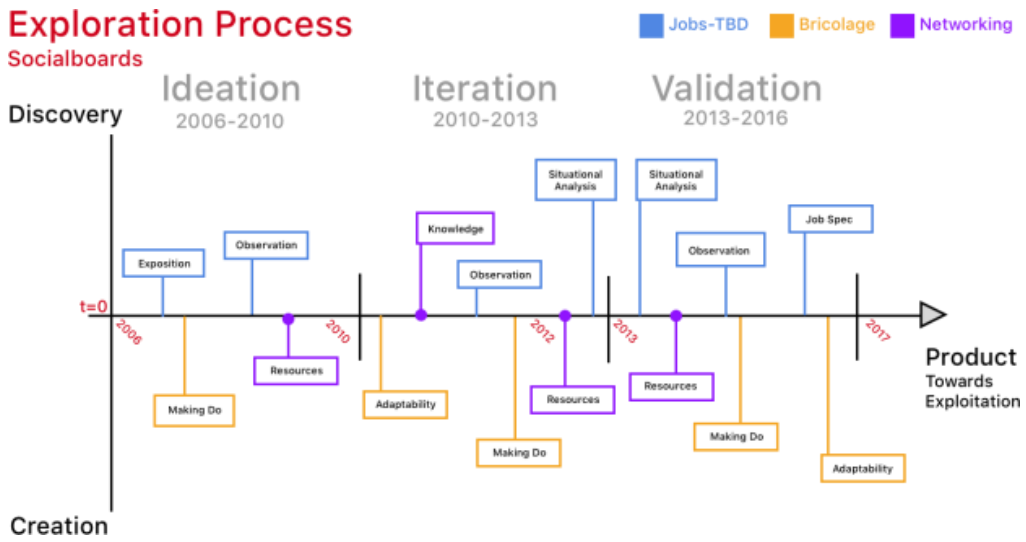

Figure 11: A refined version of the Socialboards Timeline

We have conducted an in-depth analysis of each of the startups timelines (Appendixes 6) alongside the transcripts (Appendix 5) from the interviews in order to see whether any distinct pattern comes forth which can be put to use in identifying the formation of opportunities during the exploration process. In this way we achieved making a theoretical interpretation of the actions and decisions taken by founders of technology companies born in Norway that were innovative enough to generate sustainable businesses models and progress beyond their startup phase.

5 Results

The outcome of conducting this research is the creation of a model that gives a better understanding as to: How the formation of opportunities can be identified in the exploration process of early stage startups in Norway. In order to do this we have orchestrated an in depth analysis of current literature regarding opportunity formation and exploration and conducted

11 semi-structured interviews with leading Norwegian entrepreneurs in the varying fields with the tech industry.

The analytical framework that gives basis to our theoretical model consist of using elements extracted from the theories of Jobs-to-be-done and Entrepreneurial Bricolage as two opposite but complementary lenses to distinguish the nature of the decisions made by the founders of companies in Norway. These decisions are responsible to provoke multiple intentional or random events during the early days of each startup that require the utilization of knowledge and resources for discovery and creation of opportunities respectively. We also add Networking as a third theory of entrepreneurship from which elements permitted us to identify events when discovery and creation of opportunities were not able to be covered entirely by the combined use of the other two theories.

Prior to the analysis of results in this chapter, we present an overview of the raw data (Anderson, 2010) through three tables. We present them as Appendixes to facilitate the recognition of which elements of the three theories of innovation and entrepreneurship are more prevalent in each of the stages of the exploration process, as defined by being present in 7 or more cases.

- Table of Data in Ideation(Appendix 3) in which the most prevalent categorization of events are: JTBD - Exposition and Observation, and Networking -Knowledge

- Table of Data in Iteration(Appendix 4) in which the more prevalent categorization of events are: Bricolage - Adaptability and Making do, Networking - Resources and JTBD - Situational Analysis and Job Spec.

- Table of Data in Validation(Appendix 5) in which the more prevalent categorization of events are: JTBD - Situational Analysis and Job Spec, and Bricolage - Adaptability.

Below we will present a more thorough analysis of our primary data including more elements than those that are prevalent in the categorization of the raw data. This is done by looking at each of the 3 stages we have defined during the opportunity exploration process: Ideation,

Iteration, and Validation. Looking at the transcripts, we selected the most relevant quotes that can be interpreted as instances of each of our coding categories. An analysis across the cases revealed these categories appearing in a distinct pattern along the exploration process.

5.1 Ideation

We decided that the process of exploration starts with an ideation phase. In this phase, founders are embedded with knowledge, or obtain resources that end up helping to generate the initial idea that sparks their entrepreneurial spirit. The process of exploration can start long before the founders incorporate a company or even meet each other. Each of them can be working independently or together on different ideas before they manage to converge on just one at the right moment. Below is an analysis of each of the coding categories that appeared most frequently within the ideation stage.

Networking - Knowledge

Events in this category happen as a discovery of knowledge that each of the founding entrepreneurs have at the start of their exploration phase. We associate this kind of opportunity formation with the networking theory for the acquisition of knowledge. After the entrepreneurs have developed particular skills or acquired a unique perspective of the world, entrepreneurs connect with or seek for other people that have improved or complementary views of their ideas. By doing so, an opportunity might arise. The very moment they begin interchanging their ideas, each member of the team starts contributing to the further development of an opportunity to innovate.

"*I was on stage holding a presentation in Norway about Play, which I had been studying professionally though my work...when I presented this talk a fellow alumni and viewer of the talk saw a connection between what I was talking about and what a professor in Trondheim was doing." "There were more than 3 different streams of ideas that independently we have been doing, but the magic happened when we met*." **Johan Brand - Kahoot**

"*A friend of mine had done a PhD on how project management could become better, and we saw that most of the project based tools were around the project leader and not the project participant, and we decided to turn this upside down."* **Terje Torma - UpWave**

"*I met Lars, one of the initial co-founders because after 3 years of a master in electrical power engineering. I switched to NTNU school of entrepreneurship where he was a student in the year above and we got introduced as classmates. Lars and the other co-founders were making a product for Go-Pro and I was working for Go-pro so we started talking.*" **Didrik Dege Dimmen - FlowMotion**

"The idea actually came from 2 sources – one was from Rolf Assev whom is one of the founders of startup lab talked to Gautam. The third co-founder (Jørn Mikalsen) had a similar idea and he met Gautam. Rolf had an opportunity to look into this industry – the idea came to him because his wife was a doctor and she had the problem of booking and hiring interpreters – so he knew that this idea could solve the problem, he knew some investors that wanted to take on the challenge." **Gautam & Rodney - TikkTalk**

In the examples given by each of these quotes, the founders of these startup companies all came together based on their similar or complementing ideas as to their vision of a potential opportunity.

Jobs-to-be-Done - Exposition

The entrepreneur and other members of the founding team are usually developing their skills in previous companies where they have been employed. Meeting with problems in other situations or environments, and particularly formulating ideas to solve them is what contributes to discover the initial elements of the opportunity during ideation. We assume that this phenomena occurs thanks to the interpretation the entrepreneurs have of the situation or problem. They share their knowledge in order to think about solutions, oftentimes without having founded their company yet.

"Kuehne+Nagel was a huge global company – when I started I did basic stuff – I bought capacity – simple middleman exercise. I did it with Thomas (Co-Founder). I felt that I did not provide any more value under the table to our customers, whilst still earning more in periods where the market was good." **Patrik Berglund-Xeneta**

"The professor was applying play to the classroom through quizzing in the lecture hall, Morten was looking at play in the cinemas to get people who wouldn't usually collaborate to

collaborate, and me and my design partner were more looking at problem solving and design through methodology" **Johan Brand-Kahoot**

"We won a competition to California in 2016 to spark our entrepreneurship side and become more creative, whilst there we had a trip to the cinemas and this reminded us of how cool this experience is and how unchanged it has been but that young people are so focused on their mobile phones all the time and so are missing out on this classical cinema experience, if we could somehow combine the cinema experience with the mobile phone then…" **Harald & Eirik - MovieMask**

*"The problem was observed very easily as the government did a lot of research showing that 9 out of 10 times hospitals were having to use unqualified interpreters – siblings, children or family or often times the interpreters wouldn't even show up for their sessions or send someone else, there was no ID verification. There were payment issues where interpreters were not making much money - agencies taking much in commission. So this came from this government report as well as the personal experience of Rolfs wife as well as Jørn and his input from all the experience he had had with hospitals throughout to his career***" Gautam & Rodney - TikkTalk**

In nearly all of the cases we examined at least one instance where exposition to the problem occurred, and subsequently is what drove the founders to push forward or create the concept for what their business would become.

Jobs-to-be-Done - Observation

To keep discovering more of the opportunity, founders continue the process of exploration by observing if a certain idea has more potential than others. The complexity of the jobs that products or services can help people get done makes it difficult to obtain insights from collecting bits of data from customers in their moments of struggle.

"I don't think we have a very high degree of disruption in the products, the more simpler ideas of a product not being in the way of actually doing things, we are a tool for organising, get shit done - focus on the tasks" **- Terje Torma - UpWave**

"Rolf tried to convince Gautam to take the role of starting the company but he did not accept as he did not see the market or the need and didn't see himself as running a company, he did make a prototype for him, told him this was easy to do, 'I can do it but I don't want to'. but then the refugee crisis hit. Making the problems of the industry much more open and accessible as the existing systems could not scale – the refugee crisis proved that it was not doable (with current solutions)" **Gautam & Rodney - TikkTalk**

"We learnt that learning and education were stuck in their ways and it needed to be fixed. You have to change it at school which was our realisation and then we got very analytical about it." **Johan Brand-Kahoot**

In the majority of cases we found that Observation, inherently associated with the Jobs-to-be-Done theory, focuses the founders to assess the limitations of current solutions and the potential of the innovative ideas put forth during the ideation stage.

Bricolage - Recombination

In the process of ideation, there are many occasions when the founding team create new ideas by adopting the previous knowledge and experience of each individual and constructing the innovative elements of the opportunity with the resources they have at hand. This is considered in our view as a moment of recombination, in which ideas from different sources are used together to come up with conceptual or physical solutions. Most of the time, the work done recombining and pursuing these ideas is not yet targeting the opportunity directly, but forms part of the opportunity creation for the future.

"We wanted to solve the problem of getting people to collaborate. So we met up and started exploring each other's ideas separately and together, this was all about seeing the potential of the other person's ideas, presenting them and stripping it apart." **Johan Brand-Kahoot**

Usually founders are not yet targeting the opportunities directly, because they are still constrained working for other companies that are not their own, like Johan Brand from Kahoot when he was at Playgroup:

"I was creating a framework called playology - to apply it to behavioural design, marketing etc. to take our ideas our technology and other people's ideas to build 2 products in education and health" **Johan Brand - Kahoot**

or in the case of Thomas Jakobsen and his brother, they were running a different business before founding Expain:

"So then we had a company called Biomechanics – which made some development, we had made force plates to measure very accurately how high you can jump. And we were importing some equipment from Sweden and the US to help with our research." **Thomas Jakobsen- Expain**

Marianne from Vibbio had done a lot of things in her career, with a background as a graphic designer, having set up companies prior to Vibbio, even a chain of ski schools in the Alps. She had gained experience from a range of industries which allowed her to realize if there is a market to form a new opportunity:

"You have the experience from all different industries you just adapt it to this new situation, you are building something that does not exist. So there is no need to look for a recipe, it isn't going to be there. It is just a matter of not focusing on problems, it is not problems just challenges. Challenges are good." **Marianne Bratt Ricketts - Vibbio**

For the founders of Unacast, the previous experience and knowledge of the music industry gathered as founders of Tidal was essential to form the opportunity in a different industry:

"There were many thousands of owners of these sensors, how could we get them onto one platform, we based the next steps on an urge to do something, partly on our previous experience, and how we had failed, we took a clinical approach to explore the possibilities out there" **Kjertan Slette - Unacast**

Bricolage - Adaptability

During Ideation, many entrepreneurs experience moments in which they need to stop working on other projects that are not interesting for them and dedicate their time and effort to an activity that helps further develop their idea and therefore create the opportunity. At

this point, entrepreneurs usually leave their current jobs (Kahoot, Xeneta, Vibbio, Socialboards) and focus on using their skills for building solutions based on their ideas. Such effort becomes relevant for the formation of the opportunity to be captured by their companies in the future. We perceive that this process belongs to the capacity to adapt, that entrepreneurs have as part of their repertoire of tools.

"I actually realised through playgroup that I couldn't do what I wanted to so I left them and took a job with another company for 6 months to help them develop a product. They were prototyping in London and we were prototyping here in Norway so we were both developing the ideation process but from our 2 separate companies to put into practice design thinking, service design and the business model canvas and we were trying to bend it and use it in new and understandable ways, for example I used it on politicians and city to city interpretation...In We Are Human we started becoming consultants on game storming, we did big projects with large corporates and small startups around the world." **Johan Brand - Kahoot**

"I had no idea of entrepreneurship or anything, we had no framework or methodology to work off of so I kind of learnt along the way, I learnt what to do and definitely what not to do. I quit my job and jumped in 2-3 months after coming up with the idea, I applied for the grant and then got into it. I also got a very cheap loan by being creative." **Simon Souyris Strumse - Filmgrail**

" They wanted me to create something for the future but they held me back when I wanted to create video which is what I saw as the future. We have to do 80% video and they didn't get it. So I left them with what I had done. I didn't want to just run an online magazine, I did research because I knew the whole media area was changing to a point where it is completely different". **Marianne Bratt Ricketts - Vibbio**

When there were instances of adaptability during ideation within our cases, entrepreneurs faced a similar situation whereby the current company where they worked at did not comprehend their vision. And so, the soon to be founder obtains that final push to leave their job and start the creation of something meaningful to themselves.

The adaptability involves figuring out how to do things in a new situation surrounded by different conditions. This also corresponds to the steps taken by other founders that don't quit their previous company, but these are acquired and the entrepreneurs decide that is time to dedicate their effort to build something new, like Kjartan describes when founding Unacast:

"(Founding a Startup) was totally new to us. Tidal was already a stock listed company, so we had to learn it, but we actually felt that this was the easy part, we kept it structured and took the steps necessary. We had experience from working in a structured manner, taking steps to get somewhere and we had experience from global business - so we knew how to approach it and made it less scary. It is not possible to take it step by step when starting a new company, the borders are more liquid. You approach the tasks in a planned manner, it is allowed to break the rules if you have rules. It is allowed to do something unplanned if you have planned something." **Kjartan Slette – Unacast**

Networking - Resources

Having the idea and motivation is important when founding a new company, but this can be where it ends. If you do not have access to or are unable to gain access to certain resources, be it capital, equipment or even individuals with certain technical skills then moving forward with your idea becomes difficult or even impossible. To overcome these resource constraints, some founders appeal to the people they know or attend events where they reach out to the necessary individuals that facilitate acquiring the needed resources.

"We met Sverre from Unikia at an event where he was on a panel of investors. He was interested in our product and wanted to help us to commercialise the product for the average customer, turning a 15.000NOK product into at 1500NOK product. Became Expain in October 2015." **Thomas Jakobsen - Expain**

"I went to a lot of business networking events and then I met a friend there who introduced me to a private friend whom was my first angel investor". **Simon Souyris Strumse - Filmgrail**

"At this stage crowdsourcing was still very new and big data was mostly unheard of. So in a sense, we crowdsourced via a B2B market – by getting customers etc. through our contacts in the industry to give us their contracts so that we could build data." **Patrik Berglund - Xeneta**

"The cool thing the managing director of Kuehne+Nagel did with us was that we immediately sat down started sketching our plans and did some research and he invested 2 full headcounts in us just based on our ideas and some scraps and told us to go figure it out. What this allowed us to do is to completely focus on what the customers wanted". **Patrik Berglund - Xeneta**

In many of our cases, the act of the founders receiving funding or other resources that they did not otherwise have, was key to making the realisation of their idea come to fruition.

5.2Iteration:

The second step in the process of exploration is the iteration of prototypes or solutions that the entrepreneurs construct to materialize the functionality or aesthetics of the conceptual product for themselves or other people. The construction of one or more early versions of the product as prototypes can start from ideation, but we present iteration as the stage in the exploration process in which multiple cycles of creation and discovery contribute to develop further the opportunity. In an inherently iterative process, entrepreneurs propose new concepts that introduce innovation elements to their solution and these are tested against the interest of the market. The purpose is to obtain small gains or failures that the founders are able to replicate or learn from.

Jobs-to-be-Done - Situational Analysis

The progress from ideation to iteration can take some time or be very sudden depending on the capacity of the entrepreneurs to execute regarding the time and effort they can invest, the complexity of the idea and the available knowledge or resources that they have. One way to kickstart this process is to assess the value of the idea by analysing the situation in which the potential customers will be able to consume the product or service, paying particular attention to their anxieties and frustrations.

"Gamestorming and fuzzy goals was a very important part of analysing the market. We looked at different avenues of which we could apply play but at the end of the day we kept coming back to education." **Johan Brand - Kahoot**

For some founders, this process directs them to a realization in which they make decisions using their knowledge and intuition combined with the new information acquired from analysing the situation in which customers are needing their products.

"This was a huge shift. Every time we hear a feature request we assess whether it is going to be useful to all our users or if it is a very niche functionality". **- Terje Torma - UpWave**

"At the time we felt it was the best we could do despite knowing we would develop on it. But we obviously learnt, that one of the things we actually did was offer both interpreters to both interpret and receive interpretations, this was not necessarily wrong as we originally decided that anyone coming to our website could essentially do both, but after learning more about the interpretation environment in Norway we saw that it was heavily controlled in terms of qualifications necessary and also that interpreters in Norway just don't hire other interpreters. So we learned we had to be more professional and qualifications based".
Gautam & Rodney - TikkTalk

Situational analysis consists of the activities related to the discovery of an opportunity during the exploration process because it allows the founder to identify the anxieties and motivation of the people that are in a certain situation. The work of the entrepreneur at this stage is to focus on proposing an alternative solution based on their ideas to help potential customers overcome the struggle of problematic situations that arise in their lives.

Bricolage - Making Do

The concept of bricolage defines how an entrepreneur can be innovative in the way they utilise the resources they have available. This is particularly prominent in the early stages of a startup when generally the entrepreneurs resources are limited, and they therefore need to be creative. Further to this, at the early stages of a startup making do will suffice, as a characteristic that founders have to act with the resources they have or can cheaply obtain in order to give results.

"Gamestorming was used to do the iteration process. We made sure that what we were doing was game based - behavioural, not gamification. We were inherently making games. We would take the available structures and build the game elements into it". **Johan Brand - Kahoot**

As part of the theory of entrepreneurial bricolage, making do helps resources last while the team is creating the opportunity to develop a solution that has the potential to receive validation from the consumers in the market.

"The prototyping phase, the first couple of months was just stories and sketches". **Kjartan Slette - Unacast**

"There was a lot of mock-ups and lots of excursions to meet athletes etc. often there were issues with the prototypes working, we had to quickly throw things together to make them work for demonstrations. It was messy but we just wanted to produce something quickly to try and show the concept. We always try to deliver on our promises and we promised a lot of things. We are always pushing the limits. Some events had good-looking prototypes and some were horrible looking. The first prototypes for the phone we used the GoPro one and just had to make it fit". **FlowMotion - Didrik Dege Dimmen**

"From the 1st our statement has always been, launch first ask questions later SO on the very first day I asked Rodney - I need the logo - before vision, mission statement etc. And he made me a logo and a design". **Gautam & Rodney - TikkTalk**

In all our cases, the iteration phase focused a lot on getting the company out there, testing what you had whether it was the best product at the time or just what you could create based on current resources, we found that this is particularly important for gaining exposure and seeing whether your idea has any depth to it in a real world situation.

Networking - Resources

Having resources to execute on an idea is different to the constant adaptation and integration that must take place throughout the iteration phase. Although financial investment is still a valuable resource to acquire, having the right people and the right tools becomes more important.

"We have some friends in a consultancy firm and they are specialised in the same tech that we use, so we have used their resources when we have needed to save time as you really need to move fast" **Terje Torma - UpWave**

In other occasions, as the product needs to evolve through the iteration process some founders discover that they cannot make it scale by themselves. This is the situation that Patrik Berglund and his cofounder faced at Xeneta when they needed to create a way to manage all the data they were collecting:

"We knew we needed to find a developer, and me and Thomas asked my wife whether we could speak to her son's cousin. I asked him 'who is the best developer you know?' and he told us about Wilhelm, who is the third founder. We asked to meet him at Pepe's Pizza at Nydalen. We told him about the concept and the following day he resigned from his job straight away and joined us." **Patrik Berglund - Xeneta**

In cases during the iteration phase where networking for resources becomes important we found that while some entrepreneurs would adapt to the situation and make do with what they had available to them, others were more willing to expand their team and set of tools. The safest and quickest way of doing this was through Friends, and the greater networking community of entrepreneurs available in Norway.

"The real struggle was when we made the decision to go into developing our own technology - we needed tech people and we had none in our little surroundings, but we were close with Karin in No Isolation and she had a best friend who was in IT and whom loved the whole idea of Vibbio, she ended up coming on board as tech lead and brought someone with her that was teaching with her at the university". **Marianne Bratt Ricketts - Vibbio**

Jobs-to-be-Done - Job Spec

At this point, the startup has launched operations, sometimes counting new hires, and making a priority to discover an opportunity to attract the most relevant target group for which the product or service was designed for. However, the Jobs theory mentions that demographic data and personal characteristics of the customer can make companies focus on improving the product with a dimension that might be irrelevant, resulting in enormous resources wasted in the process. If the founders focus on covering the consumer's actual Job to be Done, they increase the chances for a customer to bring that product into their life.

"We had to prioritise, we couldn't be a tool for everything in the world we had to focus, and instead of using a freemium model which attracted a lot of users we wanted to have a trial

period with monthly subscription so that we could separate the people who wanted to test it from the businesses who would use it". **Terje Torma - UpWave**

Jobs theory suggests that instead of targeting a specific market and building features around their needs, founders of innovative companies iterating through multiple prototypes should frame the context and particularities of the situation in which a group of people might choose their solutions. These people might share some characteristics and preferences, but the product shouldn't be designed and developed just to be better at covering these. Instead the solution should focus on addressing the struggle people deal with to make progress when they need to have a "job" done.

"When we made the transition from a Freemium model to the trial model, we changed a lot, our focus switched, we went from analysing different features we were planning on doing to optimising the features we already had. So we got feedback on how to tweak our already functional system and we did a lot of this". **Terje Torma - UpWave**

"We wanted to make people creative. When you are game based, people accept the rules, the same as workshops, you step into the room, you say to people what the rules are and they accept it. They stop thinking about other things and get the game space, then they bend the rules and this is the creativity part when you explore what they are doing. We had all the ground rules we just need to put the game feature in. For instance people prefer multiple choice, what is a quiz but the game version of multiple choice." **Johan Brand - Kahoot**

After initial versions of the solution are built, the founder team converges on one product or service that they consider is ready to test with potential customers, they would then involve the whole company into delivering and communicating its value proposition. Making sure that the product has the right resume to be hired by the consumer. The product should be able to have the "job" done in the eyes of the potential user.

"We started with the hypothesis that young people were our main target but we would actually show it to anyone we felt could benefit from it. From casual users to showing it to companies. We would show people in organised meetings, who would take it to their family at home. There was a lot of people that could use the product. Because of our interactions with people" **- Harald & Eirik - MovieMask**

Bricolage - Adaptability

The iteration process will generally consist of many failed attempts and configurations of the product or service, making it necessary for the team to adapt to the situation

"We have shifted from being a tool that could organise anything even your video collection, into becoming more professional within the business market - we went from a consumer model over to a business model in the last 2 years". **Terje Torma - UpWave**

"In 2012 we rebuilt our product in HTML, this changed from previous technologies as we realised we needed to go global so we had to go to HTML, this made it more rapid to scale. Our breakthrough in 2012 was when we came up with the creator - when you as a player could create and launch your own education game. We moved away from being another prototype to being a complete prototype". **Johan Brand - Kahoot**

When adapting to the situation presented to you, oftentimes the solution is to change your direction and reconfigure the resources and products you have available into a new product or service:

"GoPro came out with their own product. So we changed the plan. We had always planned to do smart phones second after the GoPro so it was just a matter of switching our focus. People still wanted our product over GoPro but we just let it go". **Didrik Dege Dimmen - FlowMotion**

"By the end of march we were ready with an MVP and started showing it to people in April which is when we realised that interpreters did not want to be on both sides of the fence. They only wanted to be interpreters. Explaining the original way it was too complicated so we changed the process and decided that you choose between one of two accounts - to use or to be and interpreter". **Gautam & Rodney - TikkTalk**

"At a point we made a pivot whereby initially we were based on community driven support. When we changed to retail that community driven support was not as important, they needed more help to answer the clients out, not the consumers helping each other" **Anne & Erik - Socialboards**

5.3Validation:

The third and final stage of the exploration process is Validation. Startups at this stage have already built a product or service that can be consumed by customers or presented to investors to be evaluated as a 'good-enough' solution to a problem. These solutions would only receive validation when there is minimum acceptance by the market or support from investors to scale its production and extend its distribution. The founders are the ones who define if a version of the product fulfils its intended purpose before focusing on exploiting the opportunity they formed along the exploration process.

Job-to-be-Done - Observation

If the product or service receives validation from a customer, according to the Jobs theory, observation becomes a tool for developing insights as to why this product is being accepted. Jobs theory can dramatically transform the view of the business that the founders see.

"We couldn't rely on research the only thing we could rely on was getting to adoption for validation. So competitors we actually treated them as an asset as we were breaking the same ground, if they could break into a room we could go into the same room and vice versa."
"We have very good dialogue with most of our competitors as the space is so big and we need collaboration to kind of break the market. For introducing these foreign elements"
Johan Brand - Kahoot

For some innovative solution targeting "non-consumption" (Christiansen et al. 2016) results in a bigger opportunity than those markets in which other companies are actually competing. That means that with Jobs theory founders can discover uses of their solution and the particular situations in which people are doing nothing at all, making it possible for them to actually choose a product that can give them progress.

"Non consumption is the biggest opportunity, as our biggest competition was not doing it at all". **Johan Brand - Kahoot**

"We utilised people that were recovering in hospital they would usually just be spending their time waiting for the doctor, or friends or family to visit". **Eirik & Harald - MovieMask**

Jobs-to-be-Done - Situational Analysis

Founders that discover a job to be done that is unsatisfactorily resolved by competitors, workarounds or non-consumption, will generally enjoy a competitive advantage. To maintain this advantage, the startup has to build the right set of experiences when customers search for the product and services offered, making sure that they are more inclined to buy your product and use it over another one.

"One of our competitors thought the user was the professor or the teacher. But we knew you had to win the classroom. Your real identification of user is the student in the classroom. The teacher is purely a gatekeeper. And once you define this role it becomes easier to design for your user.". **Johan Brand - Kahoot**

"We validated our steps with what was going on in the VR industry and what players are dominating the industry, with google cardboard etc. but they had minimal users, and the main reasons was low resolution and minimum content, and we knew we could provide a lot of both". **Harald & Eirik-MovieMask.**

At this point the whole company has to maximize its operations for ensuring that those experiences are consistently delivered. Founders learn that what matters is not the bundle of product attributes tied and delivered, but the experiences the company enable for customers that want to make progress in their lives.

"We focus on the experience. What the product will give the customer in terms of value". **FlowMotion - Didrik Dege Dimmen**

"Most companies should focus on building knowledge instead of advertising and they need to do lots of little jobs. When you teach something people actually get more from your advertising." **Marianne Bratt Ricketts - Vibbio**

"We learnt how the other products are being used for anything, and since our last product before UpWave, it was targeted at anyone to do anything, and where other companies were big in offerings we wanted to narrow it down from a single users to focusing on whole real businesses that make income, not just used for a hobby. And as I experienced with other products, I see that they had the minority of the businesses segments we were focusing on so

we will keep on doing this and see if migration comes our way. We have seen some of this already". **Terje Torma – UpWave**

Jobs-to-be-Done - Job Spec

The products or services built and offered by startups usually don't succeed just because of the features and functionality they offer, but also because of experiences that people seek to have when consuming them. Founders at this stage understand the Job to be done and guide their companies to reliably match customers' expectations and more often than not strive to surpass them. This means that companies keep developing their solution while perfecting a plan to overcome the obstacles that customers have when wanting to consume the product. They relentlessly attempt to deliver the right set of experiences when users keep purchasing and using the product. At this point the job spec becomes the blueprint that translates all the richness and complexity of the job into an actionable guide for innovation.

"It is not that the stabiliser will stabilize your phone, but that you can now make cinematic quality videos with your phone". **FlowMotion - Didrik Dege Dimmen**

"We want to engage the social factors of how a team functions, that is why we added hi-five functionality, so that is kind of our first attempt to get some social aspects, especially if you work remotely but in a team, and if you don't have any social aspects, it will be so much harder to work together so we want to attack that problem". **Terje Torma - UpWave**

The transition from iteration to validation can also occur suddenly, especially if the team works hard to make the product visible in the market and it is quickly adopted by the consumer. Usually, when the product or service results to be a real breakthrough innovation in a particular industry, or by solving a particular problem that many people share, the customers will speak and make the company obtain huge growth through word of mouth.

"We launched the product - had the strong feeling throughout the whole process as we were validating rapidly. In 2013 we could really see the effect of the product and knew that this worked then it was just about getting it optimised, but we had the validation that this works with the students. EPIC WINS = fist pumping". "We were going after behaviour and that is the validation that we needed. We just did classic lean marketing, by releasing the product and relying on word of mouth." **Johan Brand -Kahoot**

"For us the money came because we could prove that all the interpreters wanted our platform so from all the interviews, the end result was they gave positive criticism and feedback" **Gautam & Rodney – TikkTalk**

Networking - Resources

At the stage of validation Networking for Resources is still prominent. Networking is important when assessing the versatility of your idea and its potential stickiness in society, and it can also be an important method for receiving validation, as often is the case that investors, fund managers, and entrepreneurs exist in the same network. Therefore when trying to validate and scale your product approaching a known body can be a more attractive prospect.

"We only went for funding in Norway then the network opened up because of what we were doing". **Johan Brand - Kahoot**

"Google is one of our big competitors and Microsoft so we have market validation as they now invest in us". **Johan Brand - Kahoot**

Further to this, early adopters of your product can often be found within your network, as these people are both more understanding of what it is you are solving as well as more willing to adopt your solution. Some of these early adopters can become part of your resources as it happened to the founders of both TikkTalk and Vibbio when people were joining their ranks after finding out about their product and becoming interested in contributing. They help create the opportunity with their work in the company, by adding more capital to scale, or increasing publicity within their own networks.

"We were in the news a couple of times. The people we ended up hiring were the ones that found us. We saw that they had passion for this. It was very useful to have them come to us and tell us why this would actually work. We looked for sales people all the time - we interviewed 60plus people. Jens the sales guy found us at Join a Startup and came straight to us afterwards and wanted to join us...NAV found us. Mohammed a Syrian refugee came to us as an interpreter. He had no qualifications but we had a video test with him and he seemed technical and interesting so we hired him for product testing etc. Then that discussion

started. He really had the passion and wanted to make it happen for himself. He always had that drive to get him to some place." **Gautam & Rodney - TikkTalk**

"The main reason why we had to shift very quickly was because we got a very serious German on board in February - the chairman of no isolation. Martin Hauge. He says plans change. He believes in the long term potential. But stated that it does not matter if we have proven ourselves in our home market, it does not count as we know people so you have to move to another country. So Stine is in an incubator in Copenhagen. We pick the incubator because of the networking capabilities. He has a massive network in Denmark" **Marianne Bratt Ricketts – Vibbio**

Bricolage - Adaptability

Scaling fast, competing with the incumbents and new entrants, finally entering into exploitation requires adaptability. At the stage of validation, founders are still presented with challenges to compete with other companies and scale their product.

"With prototyping, the way we look at it is that Kahoot is one big prototype with different small cycles, which is hard to explain to investors that the company is set up like this, and we want to keep the business like this so that our product does not get locked in so that we can still have the ability to realise that maybe this is not the big problem it is just the first step" **Johan Brand - Kahoot**

"I never view them as issues, rather as challenges, we are super happy outside our comfort zone, I stood at She Conference and told people we knew nothing about video but started a video company, we knew nothing about tech but started a tech company. We learnt and learnt, it isn't like the old days where you had to be an expert and have every single answer. You can find the answers". **Marianne Bratt Ricketts - Vibbio**

"I had always intended to build the business brick by brick, but it ended up being a born global blue ocean situation where we had to move quick to take the market". **Patrik Berglund – Xeneta**

6 General Discussion

During our research, we cross analysed the literature that covered the topic of exploration during the formation and development of opportunities, and contrasted it with concepts extracted from three theories of innovation and entrepreneurship: Jobs to be Done, Entrepreneurial Bricolage and Networking. In this chapter, we discuss our results more thoroughly. We resolve each of our propositions and put forth a model to answer our research question. By doing this we hope to contribute to the current literature that examines exploration for opportunities.

From our analysis we found that in each stage of the exploration process, some aspects of the innovation and entrepreneurship theories we put forth were more prominent than others. Furthermore, from the examination of the exploration process experienced by the founders in each of the 11 Norwegian born companies, we recognize that entrepreneurs need to deal with many factors that affect their capacity to obtain or use resources. Overcoming the constraints imposed by these factors increases the probability of creating new opportunities. The same factors can impact the acquisition of relevant information from the market or industry. Such reduced access to information limits the utilization of knowledge and makes it very difficult to discover new ways to innovate.

At the end of this chapter we give a relevant answer to our research question after addressing each of the propositions we developed. In order to refresh the mind of the reader we will first revisit the question and each of the propositions before we go into the discussion of each proposition individually.

Research Question:

How can the formation of opportunities be identified in the exploration process of early stage startups in Norway?

Propositions:

Proposition 1: Events related to the Exploration for Discovery of opportunities can be identified using theories of entrepreneurship and innovation that emphasize knowledge utilization. We resolve that events for the utilization of knowledge during the exploration for

discovery of opportunities can be identified by researchers if they relate them to concepts found in the theory of Jobs to be done (Christensen, 2016).

Proposition 2: Events related to the Exploration for Creation of opportunities can be identified using theories of entrepreneurship and innovation that emphasize resource utilization. We resolve that researchers can rely on concepts derived from the theory of Entrepreneurial Bricolage (Levi-Strauss, 1967) to identify events of utilization of resources that relate directly to the exploration for creation of opportunities.

Furthermore, we realized that these theories could help identify events where knowledge and resources are utilized to discover and create opportunities, but they were not enough to identify events where founders could acquire such knowledge and resources from their environment.

Proposition 3: Certain theories of entrepreneurship and innovation that emphasize the acquisition of knowledge and resources can provide a framework to identify events of exploration for either the discovery or creation of opportunities. In addition to JTBD and Entrepreneurial Bricolage, we decided to employ concepts extracted from Networking Theory (Hoang & Antoncic, 2003, Baker et al. 2003) to identify the events in which companies use their network to obtain knowledge to discover opportunities or acquire resources necessary to create opportunities.

6.1Exploration for Discovery: Proposition One

Looking at the formation of opportunities through the lens of Jobs-To-Be-Done, researchers can identify events that involve the utilization of knowledge during the exploration for discovery of opportunities. This is because the elements in the JTBD theory enable founders to maximize their capacity to utilize knowledge. They acquire a unique and more concise perspective of an opportunity, taking into account aspects of their customer's that other people would otherwise overlook. With this in mind, it is possible to say that events related to the discovery of an opportunity come as a result of the founder utilizing prior knowledge when exploring the environment, increasing their understanding of why certain ideas have a higher possibility to develop into innovations. In other words, Jobs to be Done theory allows

us as researchers to study the exploration for discovery of opportunities as presented in Figure 12.

Figure 12. Our resolution of proposition one

When discussing the exploration for the discovery of opportunities with our interviewees we found that it was first important to explain to them the fairly new concept of Jobs-To-Be-Done. We found that generally the interviewees had not previously heard of this theory, but the entrepreneurs were still unconsciously implementing elements of it within the process of opportunity formation.

"We started out as customers with this issue, and realised we could make up a solution by ourselves in our spare time" **Ann Kristine & Erik - Socialboards**

We found that the elements of the Jobs Theory naturally presented themselves in sequential order. The occurrence of one would generally trigger the natural progression of the next, along the process of exploration. This gives rise to the idea that entrepreneurs can discover opportunities and pursue a vision with their judgment in a structured way, giving more predictability to the exploration process for reaching innovation (Christensen et al. 2016) and reducing or almost removing the risk completely from their minds.

"We have been very risk averse from my point of view, we have been very structured, for instance keeping Nordilog as a backup and having money in that bank account, even though we did not work in that company for years, just as a fall-back plan. Willing to take up risks is not the point, it is about mitigating risks, be smart enough to check up on things without just saying, that sounds good let's put money into that" **Patrik Berglund -Xeneta**

By having an in depth idea of the current situation of the customer the founders were able to examine the features that were more relevant to their potential users. We can argue that this made them more effective throughout the iteration phase as they were able to more accurately make their solution suited to the actual "job" of the customer . According to Christiansen and his colleagues(2016), an understanding of the Job to be Done allows founders to obtain "a sort of decoder to that complexity– a language that clearly enables the specifications for solving the jobs to be done." In this regard, a successful product or service can only arise as a solution when it's offered to cover the full complexity of the "Job" offered.

"This is what we have in us, when people are truly innovative they have a common language and they use this to gain structure." **Johan Brand - Kahoot**

During the exploration process, there are still other events that occur before the product is good enough for being "hired". Elements of Jobs to be Done identified during the formation of an opportunity definitely helped some of the founders achieve validation and subsequent growth at the time of introducing their product into the market. They did it by focusing on developing a value proposition of their products or by directly communicating how they covered the emotional, social, and functional components of the problem being solved with their solutions.

"We were extremely focused on the value proposition and we broke down who is the teacher, what they need, what the students need, and we were very clear on these different value propositions, and the school itself needed to concede on the technology as they did not like mobile phones in the school." **Johan Brand - Kahoot**

"We are relieving their pain, so we get them on the emotional level and then focus on explaining the functional aspects. 100% of customers are pitched on an emotional level, starting by helping them with a problem, then dive into the functionality." **Anne & Erik - Socialboards**

6.2Exploration for Creation: Proposition Two

In the process of exploration for creation, the goal of entrepreneurs is to diminish the randomization of opportunity formation and endogenously take action that may or may not close the gap between their vision and the reality (Lanzara, 1998). Opportunities are created by the entrepreneur based on their own vast knowledge and experience going through the process of exploration that often entails ideation, iteration, trial-and-error attempts, in order to validate novel products and services. Whereas the discovery of opportunities relies heavily on the knowledge of the environment by the entrepreneur, creation of opportunities is a more skill based procedure that derives from the utilization of resources. In other words, Entrepreneurial Bricolage theory allows us as researchers to study the exploration for creation of opportunities as presented in the Figure 13

Figure 13. Our resolution of proposition two

Entrepreneurs use their adaptability skills as bricoleur to have a stronger connection to their resources and internal abilities so that they are able to execute on an idea that would otherwise not have existed, making the process of opportunity creation completely dependent on the vision of the entrepreneur.

"The customers loved the concept. This index didn't exist in the industry as of yet. So in order to make money we needed to create this". **Patrik Berglund -Xeneta**

The fact that the opportunity is based on the actions taken by the entrepreneur who creates it also results in an increased difficulty to mimic the activities of the business, oftentimes

resulting in the destruction of what otherwise was a "stable" industry (Schumpeter, 1934). Both incumbents and new entrants lack the full understanding of the opportunity created by the founder and therefore they are less likely to become a competitive threat.

"The managing director of Kuehne+Nagel liked the idea – he invited us to the management meeting – but it didn't go the right way, by the end of the meeting some of the guys stood up and hammered the table saying that we need to be stopped. They didn't want this to happen saying that they stood to lose too much, cannibalising their own profit and killing it".
Patrik Berglund - Xeneta

When looking at the exploration for creation we implement the theory of Entrepreneurial Bricolage, as the bricoleur will create novel solutions based on the resources available and their ability to adapt to foreign situations by recombining these resources and making do to execute quick, fail fast, and improve. However we noticed that when examining elements of opportunity creation as seen through entrepreneurial bricolage, the topic of resource constrained environments did not present itself amongst our cases, in almost all instances our interviewees felt that Norway was a great place to start a company as it was rich in financing and talent.

"Norway is perfect for a sandbox to develop and test our product, many of our customers today are from Oslo, but on the tech side it is not good here in Norway for our technology. If we streamline our tech a little bit better, and we get the resources to refine it a little bit then it will be much better to involve outside people to work with, but we have not spent much time on documentation as we have not made time, we just have to execute which makes it difficult to explain to other people". **Terje Torma - UpWave**

"Norway is the perfect laboratory, there is a lot of money here, not a lot of VC but it has a highly skilled labour force, trusting environment, very easy to get the first prototype up Young entrepreneurial community, High loyalty (this does make them a bit more traditionalist as well), But if you treat Norway as a laboratory you will get your first prototype or market but as soon as you have that you get out". **Kjartan Slette - Unacast**

A bricoleur is defined as an individual that has a vast array of knowledge and experience from different industries, that empowers them to act in a completely different environment in

order to produce a novel solution. During iteration, this is a capacity of the entrepreneurial individual to employ prior knowledge to utilize resources in an innovative way. Furthermore, it reinforces their capacity for securing important resources necessary for moving forward with their idea.

"For a team to be truly innovative they need to have a common language, use the structure of the team. Of Games they have learnt when they are kids and applying itself. Designers often intuitively like to have a childlike view, you draw a problem area and define what to look at and that is what we were drawn towards with Kahoot and then threw at it what we had learnt from gamification technology and research along the way" **Johan Brand - Kahoot**

Another aspect of the entrepreneurial path is the capacity of startups to be agile and adapt to the conditions imposed by the environment. Their adaptability is not only to the external environment. Founders also use this capacity to respond internally against the increased chances of failure. Executing fast might result in uncertain outcomes. To mitigate the high levels of uncertainty, entrepreneurs learn to communicate their learning from attempted failures, doing it as often as possible to make changes in the vision or goal that the team wants to accomplish (Maurya, 2012). Such changes of direction in the entrepreneurial path are called "pivots"(Eric Ries, 2011).

"When you build a company you are constantly making mistakes, whatever the reason so when you are building one you have to build one that can handle this, that is agile and flexible and accept a lot of failure". **Kjartan Slette - Unacast**

The culmination and application of an otherwise redundant set of resources allows the entrepreneur to execute on their ideas and build a startup, helping them to grow in the early stages. By relying on your own intuition and taking chances in an unknown environment, the resource become the source of entrepreneurial opportunity (Baker and Nelson 2005), and as such, represent a critical advantage for entrepreneurs that are ready to acquire and implement them.

6.3 Exploration for Creation and Discovery: Proposition Three

Through our results, we recognized how certain theories of entrepreneurship and innovation that emphasize the utilization of either knowledge or resources are not enough to identify all instances of creation and discovery of opportunities by themselves. In our study, we appealed to the Theory of Networking to complement the cases in which the entrepreneurs are not focused on utilization, but instead seek for the acquisition of knowledge and resources to continue progressing along the exploration process. In other words, Networking Theory allows us as researchers to study the exploration for either the creation or discovery of opportunities as presented in the Figure 14

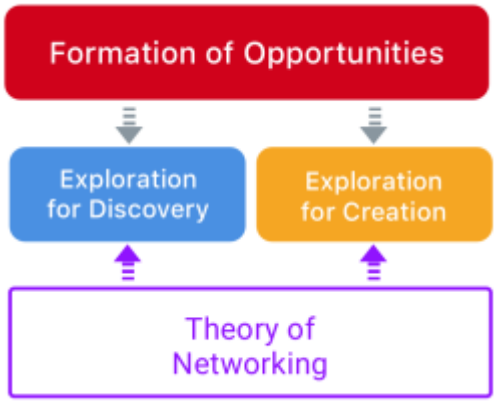

Figure 14. Our resolution of proposition three

In all the cases of the startups we studied, they had access to a network of individuals that enabled them to acquire knowledge in the form of more ideas, skills, experience and people to complement their own ideas and jumpstart the discovery of the opportunity. Likewise the network facilitated the acquisition of resources to create their opportunities through an iterative process of building versions of their products and services. Whenever they were constrained along the exploration process using the resources they had at hand, they quickly adapted to seek for more resources, relying on the network to acquire capital, materials, tools or publicity that could help them overcome their limitations as a startup. We therefore see that in both instances of creation and discovery of opportunities, the utilisation of a network can help the entrepreneur when presented with a roadblock or constraint that the entrepreneur/s alone cannot get around.

"We met Sverre through Connect Norway at the Spring Fair where we presented our case for 15mins and Sverre became one of the Investors. Sverre Invested In Expain 300.000NOK and so did we to have the starting capital" **Thomas Jakobsen - Expain**

Similarly as important as networking for resources in the iteration stage is the process of utilising your network to develop upon your knowledge and have a better understanding of what you are trying to create and how to go about it is pertinent to knowing what to do with the resources you acquire. Networking for knowledge contributes to acquire knowledge or access to skills within the entrepreneur's network. We found this happening when the entrepreneurs involves a new founding member in the team. This person contributes to advancement through the exploration process with more than resources.

"Very early on after meeting Sverre we started to meet big retailers - Elkjøp etc. to them we of course said that this is a big problem, 30% of Norwegians have shoulder problems - gave the retailers faith in our products by our expert panel - showed them the studies we had done. Also received the credibility from Sverre as he too was a supplier to these retailers. He knew from the beginning that they could pull this off immediately. So the retailers committed to a first purchase, giving the product validation on all the products" **Thomas Jakobsen - Expain**

Particularly, within those cases where the founders were connected with schools and universities, they were able to rely upon past academics and experts in certain fields of which they had little experience.

We then started networking by going to local opticians and going to universities to get theoretical background and a mentorship program from the university of entrepreneurship - **Eirik & Harald - MovieMask**

"Our father is the head engineer at the lab in movement analysis at Norwegian Sports University in Oslo - there they have lots of equipment for analysing movement. Big Equipment measuring EMG for muscles. He had been doing this research on all sorts of athletes, on how to improve performance but also how to examine muscle pain. We rely upon both the research of others and also on university and expert inputs based on the products". **Thomas Jakobsen – Expain**

6.4 Theoretical Model: Answer to our Research Question

As entrepreneurs, we recognize that there is no similar path for the exploration process of opportunities happening in different companies. We think that this is because the creation and discovery of opportunities depends on particular conditions and circumstances in the entrepreneurial process of each founder: The mind-set of the entrepreneurs, their approach to obtain knowledge and their perspective when analysing it, the availability or scarcity of resources in the environment, and the creative ability to utilize those resources available to build solutions. However, as researchers, we saw the possibility to study the progression of the exploration process experienced by many startups going from idea to business. We wanted to explore the aspects of certain innovation and entrepreneurship theories that could allow to identify the nature of opportunities during events we experienced as entrepreneurs and that many other founders face due to their decisions and actions.

Entrepreneurs form new ventures guided by their vision, heavily influenced by their knowledge and perspective, together with the resources available in the environment. At the early stage of any startup company, and along its development, the same entrepreneurs actuate on the opportunities formed by the processes of exploration for discovery and exploration for creation. Very often, the actions and decisions taken by entrepreneurs exhibit patterns already described in theories of entrepreneurship and innovation. Many of the indications prescribed in multiple frameworks that fundament these theories are implemented casually or consciously by entrepreneurs during the exploration of opportunities to attain innovation. To make our thesis complete, we took elements of the most appealing innovation and entrepreneurship theories and adapted some elements from them according to our perspective. This thesis is the compilation of our effort to identify the events extracted through a qualitative research, according to their relatability with either the exploration for creation or exploration for discovery of an opportunity.

We present the answer to our research question (figure 15), a theoretical model for identifying the formation of opportunities in the exploration process of early stage startups (based on our study of 11 startup companies in Norway):

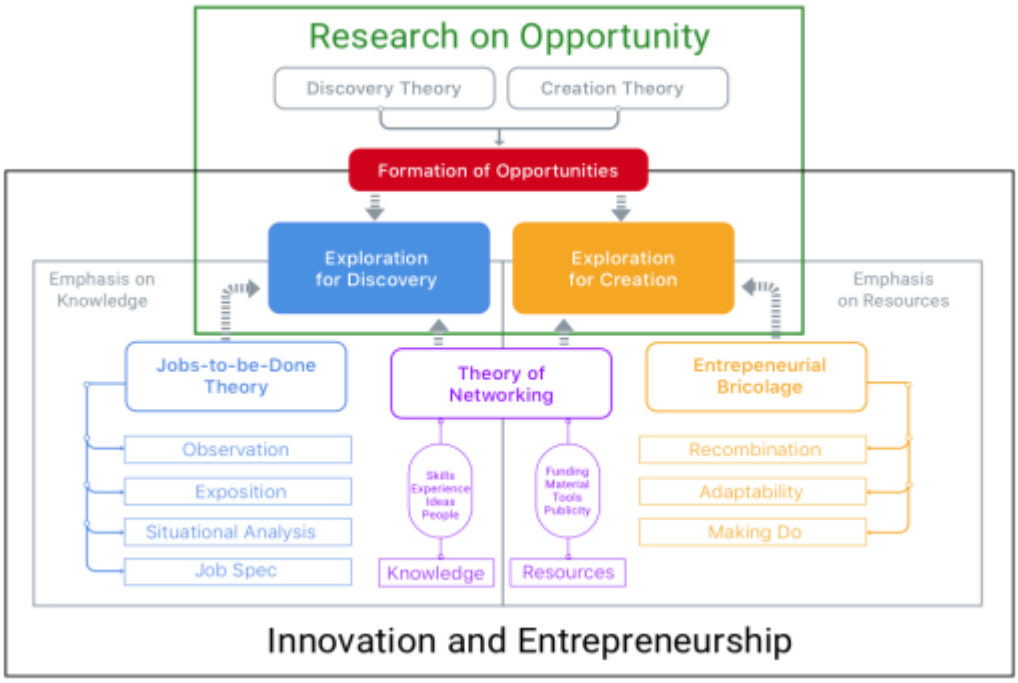

Figure 15. Our theoretical model with the topics of research studied in our thesis.

6.5 Contributions

In our thesis, all the actions and decisions taken by the entrepreneurs at early stages of a company, even before it's foundation, are considered part of for exploration.

Since exploration might be the most relevant source of innovation when a startup initiates the formation and further development of an opportunity, we want to offer a potential model that aids researchers studying the innovation processes in startup companies. Researchers attempting to explore and induce a theory of how startup companies form opportunities can improve our model in which we identify the characteristics of the jobs to be done, entrepreneurial bricolage and networking theories that they can incorporate in their respective research. Our "reference tools and models" are created to aid the explanation that concepts of such theories can be used to identify the implications of each action taken and decisions made by the founders of startup companies during the exploration for opportunities. In addition to our model, we show the process used for codifying our transcripts into an easy-to-interpret table, this is to assist other researchers that decide to replicate our study.

6.6 Limitations

In our eyes, the entrepreneurs that participated in our research are prominent figures in the Norwegian Startup Ecosystem. As such when analysing the transcripts it was possible to

notice moments when we were so enthralled by what the interviewee was saying that we forgot to consider the legitimacy of it. As was mentioned in our Analytical framework, it is always important to remember that entrepreneurs have a tendency to spin tales, and that often statements may be taken out of context in order to romanticise their story. We attempted to mitigate this issue by giving context to our questions through explaining the theories of innovation and entrepreneurship at the start of each interview as well as in the emails we sent to each interviewee when organising the interview date. Further to this, as we are entrepreneurs with our own startup, it was often the case that we attempted to relate the situations experienced by our interviewees to those that we have had during our own exploration process. Whilst in theory this seems like a positive approach, the outcome was more of a justification of why we did certain things as opposed to keeping an objective viewpoint for the sake of the research. We eliminated this subjective viewpoint as much as possible by having external people examine our research to give us feedback on when we strayed from the topic.

6.7 Future research

The findings in our research could lead to further studies on how the exploration for discovery and creation processes are executed, how they are interrelated and interdependent of one another during the exploration process that founders go through when building a startup company and maybe even beyond. That we have observed how two or more frameworks can overlap, complement and work simultaneously alludes to the fact that most frameworks can be similar in their aspects and as such it is important that entrepreneurs use them more as referencing tools than gospel. Future research could employ the addition of other entrepreneurial frameworks and theories present in the field of entrepreneurship and innovation to give a more concrete overview of how no one theory is more relevant than another. We also recommend that conducting a longitudinal study based on our model could lead researchers to get more granular data, taking the ins and outs of the entrepreneur's exploration process while testing for finding flaws or strengths in our model.

6.8 Concluding Remarks

We conclude our discussion chapter mentioning that we encourage other researchers to replicate, use or modify the theoretical model developed in this thesis. We also expect that they communicate any anomalies, faults or limitations in our model so we can together decide how to improve it. If a researcher finds necessary to replace the theories of entrepreneurship and innovation used for our research with others that they consider more suitable, we will be glad to lending a hand. After all, we consider that our propositions enabled such flexibility and we expect to see more results generated from the utilization of our model. Finally, we realized that there may not yet exist complete theories about entrepreneurship and innovation that can fully explain why certain companies succeed while others don't. Certainly, not all frameworks for entrepreneurship fit as a guide towards innovation, especially considering the different conditions and circumstances in the entrepreneurial path of each founder. After discussing the results of our thesis, we could argue that the biggest mistake that new founders of a startup company can make is to have a close minded attitude for accepting change and refuse to adapt their entrepreneurial path proceeding with the abuse of knowledge and resources in the process. Founders can fall into the trap of following theories and frameworks as prescriptive tools for the success of their companies. When entrepreneurs act based on a herd mentality, relying solely on a particular innovation theory or framework designed for entrepreneurs to "succeed," they often avoid paying attention to the external factors of the environment and internal operation of their organization, they risk missing out on opportunities and making costly mistakes from which the startup may not recover.

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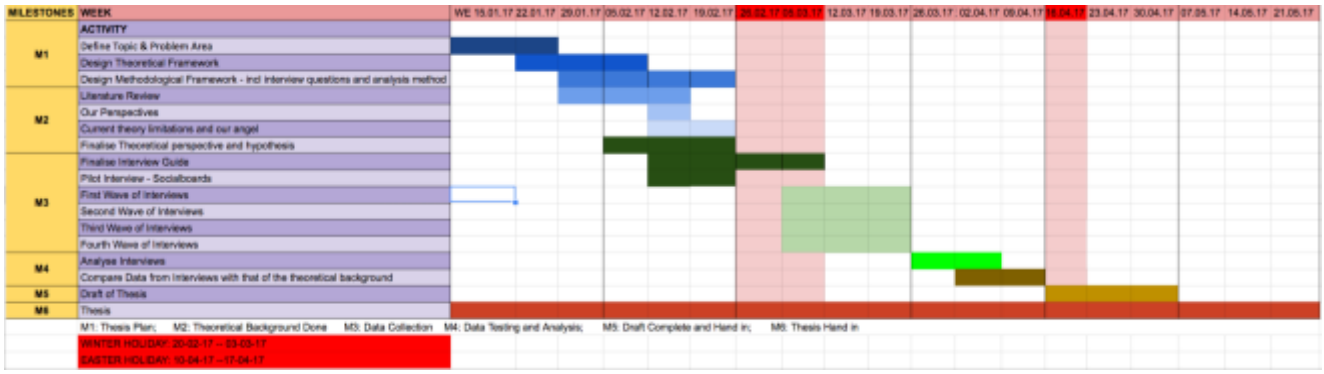
Appendix

Appendix 1: Timeline for tasks and milestones of thesis progression



Appendix 2: Table Of Interviewees (Cases)

Company	Interviewee	Service/Product	Format	Date	Length of Interview
Social Boards - Pilot Interview	Anne Kristine R. Grude & Erik Platou Lundquist	All customer service inquiries in one place	Face to Face	28.02.17 at 15.00 (Espresso House)	35 Minutes
Unacast	Kjartan Slette	The worlds #1 global proximity platform	Face to Face	08.03.17 at 10.00 (Unacast Office)	35 Minutes
Expain AS.	Thomas Jakobsen	Massage & Pain Relief Technology products	Face to Face	08.03.17 at 16.00 (Expain Office)	30 Minutes
Vibbio	Marianne Bratt Ricketts	Smart Video Content	Face to Face	13.03.17 at 14.00 (657)	40 Minutes
FloMotion AS.	Didrik Dege Dimmen	the world's most versatile smartphone stabilizer.	Skype	15.03.17 at 12.00	40 Minutes
UpWave	Terje Torma	Task Management for teams made easy	face to Face	15.03.17 at 14.00 (UpWave Office)	35 Minutes
Movie Mask	Harald Manheim & Eirik Wahlstrøm	A personal Cinema Experience	Face to Face	16.03.17 at 11.00 (Startup Labs)	45 Minutes
Xeneta	Patrick Berglund	Freight Price Rate Analytic Tool	Face to Face	16.03.17 at 14.00 (Thorvald Meyers gate 7)	50 Minutes
TikkTalk	Gautam Chandna & Rodney Boot	an open digital solution for managing interpretation services	Face to Face	21.03.17 at 11.00 (Startup Labs)	50 Minutes
FilmGrail	Simon Souyris Strumse	Enabling you to always find the right movie - for the right moment	Face to Face	23.03.17 at 13.00 (Toyen Startup Village)	35 Minutes
Kahoot	Johan Brand	Fun Learning Games	Face to Face	24.03.17 at 13.00 (MESH)	50 Minutes

Appendix 3: Table of coding instances for our transcripts in Ideation

	Ideation								
	Discovery					Creation			
	Knowledge	Exposition	Observation	Situational Analy	Job Spec	Resources	Adaptability	Recombination	Making-do
Kahoot	1	1	1	0	0	1	1	1	0
Xeneta	1	1	1	1	0	1	0	1	0
Vibbio	1	1	1	1	0	0	1	1	0
Unacast	1	1	1	1	0	0	1	1	0
Expain	1	1	1	0	0	1	1	0	1
MovieMask	0	1	1	0	0	0	0	1	1
Tikk Talk	1	1	1	0	0	1	1	0	0
UpWave	1	0	1	0	0	0	0	0	1
FilmGrail	1	1	0	0	0	0	1	0	1
FlowMotion	1	1	1	0	0	1	0	1	1
Social Boards	0	1	1	0	0	1	0	0	1
TOTAL	9	10	10	3	0	6	6	6	6

Appendix 4: Table of coding instances for our transcripts in Iteration

	Iteration								
	Discovery					Creation			
	Knowledge	Exposition	Observation	Situational Analy	Job Spec	Resources	Adaptability	Recombination	Making-do
Kahoot	0	0	0	1	1	1	1	1	1
Xeneta	0	0	1	1	1	1	1	1	1
Vibbio	0	0	0	1	1	1	1	0	1
Unacast	1	0	0	1	0	1	1	0	1
Expain	1	1	0	0	1	1	1	0	1
MovieMask	1	0	1	1	1	1	0	0	1
Tikk Talk	0	0	0	1	1	1	1	0	1
UpWave	0	0	0	1	1	1	1	1	1
FilmGrail	1	1	1	0	0	1	0	0	1
FlowMotion	1	0	1	1	1	0	1	1	1
Social Boards	1	0	1	1	0	1	1	0	1
TOTAL	6	2	5	9	8	10	9	4	11

Appendix 5: Table of coding instances for our transcripts in Validation

	Validation								
	Discovery					Creation			
	Knowledge	Exposition	Observation	Situational Analy	Job Spec	Resources	Adaptability	Recombination	Making-do
Kahoot	0	0	1	1	1	1	1	0	0
Xeneta	0	0	0	1	1	0	1	0	0
Vibbio	1	0	1	1	1	1	1	0	0
Unacast	0	0	0	1	1	1	1	1	1
Expain	1	0	1	1	1	0	1	0	0
MovieMask	0	0	0	1	0	1	1	0	0
Tikk Talk	0	0	0	1	1	1	1	1	1
UpWave	0	0	0	1	1	0	1	0	0
FilmGrail	1	0	0	1	1	0	1	0	0
FlowMotion	0	0	1	1	1	0	1	0	1
Social Boards	0	0	1	1	1	1	1	0	1
TOTAL	3	0	5	11	10	6	11	2	4

Appendix 6: Interview Transcripts

Socialboards

Ann Kristine R. Grude & Erik Platou Lundquist
Date Of Interview - 28.02.17
Length of Interview - 35 minutes
Mode of Interview - Face to Face

We introduced the topic of our thesis and what we were hoping to achieve.

This is just a transcript whereby the most important aspects of the interview (in our opinion were writing down in point form (all bold writing is when we spoke).

It is not necessarily linear as we can get traction and then go back to ideation. Some people don't believe in these frameworks etc. and some do. The good things about these frameworks is that they are very abstract, we can pick and choose from this.

Can you tell us a little bit about social boards:

- In social boards we work with customer service in all the digital areas, with 4 main core values that we help companies with:
    - Help clients reduce the number of problem areas by up to 50% with dynamic FAQ's they can adapt to any social media channel
    - We are going to have all customer communication via social media and email coming into one location
    - Help the companies reduce the response time
    - Inside analytics based on all the channels and the different information. **V-J-Job Spec**
    - Big companies with a lot of users but making a scaled down version for smaller companies **V-B-Adaptability**

Can you tell us about the process of coming up with and implementing the idea:

- Long process, started back in 2006 - with a feedback system (before social media) -. Was difficult for clients to get in touch with the companies. Before social media
- After social media we saw that this needed to change otherwise we would be left behind.
- Then social boards was created. **IT-B-Adaptability**

Prior to creating and coming up with the idea had you had much experience within this industry, did you see that there was a gap that needed to be filled?

- Yes, we started out as customers with this issue, and realised we could make out a solution by ourselves in our spare time **ID-J-Exposition**

If we can bring your attention to our framework template, basically we are looking at how we can utilise the framework behind to Innovation and Entrepreneurial theories, JTBD and Bricolage, we have this analytical tool that we want to use to help us map out the process of exploration, how you came from idea to product. We want to segment this into 3 sections. Idea, Prototyping and Validation.
We will map out the process as we discuss Social Boards.

If you can continue recall the process, starting with what your first step was, did you immediately decide to begin production of the idea behind social boards or were you more focused initially on building up a team and resources?

- We basically started to execute immediately, as we were both developers ..**ID-B-Making Do**
- so we basically made a prototype and saw what people thought of it. Taking the prototype out to clients and seeing if it was a fit for their company. **ID-B-Making Do**

During the ideation phase we would like to know from your original idea through to social boards, what events took place. What prototyping efforts were made.

- Well we had a feedback system before social boards back in 2006.
- 6 months after we began we went full time - after having the prototype up and running and receive regular feedback **ID-J-Observation**
- We accidently met an investor - not at a networking event, but when looking at office spaces just to keep the dream alive
- The Realtor loved our concept and hooked us up with an investor. It is important not to close up too much you must open up to people and see if it is a feasible idea. **ID-N-Resources**

Were you always planning on getting investors.

- No, not really, we had planned to bootstrap the process. **ID-B-Making Do**

What was your plan if you were not going to find investors

- We were super fresh entrepreneurs we wanted to make sure the prototype worked and that there was a solid base to the idea, before even considering looking for investors.
- We got the funding in place at the end of 2006. **IT-B-Adaptability**

Can you recall some of the biggest issues you faced when you were coming up with and presenting the prototypes?

- We had good jobs and were on total different paths, so we were not fully committed until we came up with the prototypes.**IT-B-Adaptability**
- We originally came up with this for consumers, based on our feedbacks we were to have subscription models for companies. **IT-N-Situational Analysis**
- As soon as we got investors on board the business model completely changed. WE had to start going to companies, start focusing on getting money not building a customer base.**IT-N-Knowledge**

When after the funding came in did you launch the full idea

- March 2007 - we began to work on the first product.**IT-B-Adaptability**

What took you to move to social boards?

- We started Socialboards in2012 - with Facebook getting traction
- C2B dialogue was moving there. **IT-J-Observation**

What took you to realising this was a valuable idea?

- When we first launched the first product, we realised we were early- companies weren't used to getting feedback that easily, but when social media began to build up we realised the trend that was emerging and knew that it was going to be so easy for

companies to get feedback this way. They will get it whether they want it or not **IT-J-Situational Analysis**

- WE saw we need to do something big here if we are going to live 5 years ahead. **IT-B-Adaptability**
- So we shut down the original company, drew up our new ideas and basically started booking meetings showing our sketches.
- WE had people wanting the ideas based on the sketches and paid for a product they would not have for 6 months.
- 2012 was when we had these sketches and presented them.**IT-B-Making Do**

Can you tell us a little bit more about the process behind your mock-ups becoming validated, when did you finish/launch the first product. What was the process?

- The process was and still is that we sell ideas. We go to the customers and say we are going to make this, are you interested. They see a very raw version and as we got other clients involved the product got bigger and bigger with more issues being presented to us. **IT-B-Making Do**
- At a point we made a pivot whereby initially we were based on community driven support we changed to retail that community driven support was not as important, they needed more help to answer the clients out, not the consumers helping each other **IT-B-Adaptability**
-
-

Did you consider any other competitors at the time of benchmarking open software?

- There were competitors, at least at that point, we all make similar stuff but have a different approach on how to solve issues for the clients. So we checked USA, Europe, Nordics, and did a lot of benchmarking.t **IT-B-Observation**

Did you ever have a problem with what you had available to you, needing to outsource different tasks around the business?

- At this point we hired a developer.

How did you find the other team members?

- First we went to India, we needed to speed up a bit to meet the MVPs, we had just one a Nordic startup award for our product, showing that the product was there, unfortunately the team did not work at all, giving us a lot of issues.
- Then we decided to give it one more shot, restructured and built a team in Russia which is still our team
- There are 3 of us last year and now there are 8 of us.**IT-B-Adaptability**

How did you find the rest of the team?

- It was actually through a guy here in Oslo, who had a company that outsourced developers. And one of the guys that went into our team just emerged as a good tech. lead and we took more people from this company and made them work directly for us.
- He replaced a lot of our parts so it was a slow process. **IT-N-Resources**

So have you at all changed your strategy along the way? From when you first started, has it been a process of learning by doing?

- Yes.

So at what time did you go live?

- 2013
- We almost had to rebuild everything we made at this time as well, so for the following 2 years we wanted to focus on looking after the customers we had, making sure that they had everything they needed and all along fixing our bugs and issues, adding new models as we saw the market was shifting and what companies want **V-J-Situational Analysis**
- In 2016 we went out pushing again and managed to double our income.

Was focus on customers very effective?

- Yes very important whilst we were rebuilding the product

When did you receive your funding from Startup Lab? Validation

- 2013, It was really just used to hire the guys in Russia. **V-N-Resources**

At the time of bringing the product to market, were you the only solution available on the market?

- There were no similar Norwegian companies, from the US but they were not penetrating the Nordic Market. **ID-J-Observation**
- WE saw these other companies handling marketing on Facebook, focused on pushing information, not handling it. **V-J-Observation Non Consumption**

You had all of the development skills needed to build this product, but being your first business venture, how did you go about learning all the other aspects of running a business?

- Fail quickly; learn by doing. There were no spots where you could sit with other companies, no incubators or communities **ID-B-Making Do**
- There was not much external help at that time, not many networking events. It would have been a lot easier if there was this available to us. **ID-B-Making Do**

Now that it does exist do you utilise it?

- Not so much as we have a handle on how and where this company is going, we will utilise it when scaling internationally, as we are now ready for that. WE need to

understand the process for this which I would like to talk to somebody about, as there are cultural differences. **V-J-Situational Analysis**

- We are looking through our network to find these people. WE have built a fantastic network by always being where we say we should be, talking to people, delivering on our word.

Finally, have you identified any emotional, social or functional components of your solution that are valuable for your customers? Which one are you more focused on.
What elements do you push when dealing with customers?

- I would say emotional as companies today, in order to handle all the different channels they need a lot of different solutions delivering a lot of stress.
- WE are relieving their pain, so we get them on the emotional and the focus on explaining the functional aspects.
- 100% of customers are pitched on an emotional level, starting by helping them with a problem, then dive into the functionality. **V-J-Job Spec**

Do you consider on a social element, the solution that you are dealing out, allows them to generate more traffic?

- Some customers are interested in this, there traffic etc. so they can see how much of the traffic is going back to their webpage, the retention is extremely big.

Do you focus on your customer or address problems for the end user?

- Some industries we know where to lay our arguments. Where the pressure is for the end user. Showing what we do for all our clients.

Are you now more adept at being focused on a different aspect of the business as your initial role

- We are still heavily involved in everything
- WE have adapted ourselves to be more business orientated, we adapted these skills along the way. We have adapted to what we hear from other people, always listening to what others say.
- We are working 24/7
- We both started trying to sell and saw who was more skilled at different aspects. V-B-Adaptability

Unacast

Kjertan Slette
Date Of Interview - 08.03.17
Length of Interview - 35 minutes
Mode of Interview - Face to Face

We introduced the topic of our thesis and what we were hoping to achieve.

This is just a transcript whereby the most important aspects of the interview (in our opinion were writing down in point form (all bold writing is when we spoke).

Can the theoretical frameworks of JTBD and Bricolage help explain the exploration processes for innovation of companies located within resource constrained Environments.

Background:
Tell us a little more about Unacast, your customers, industry and why you started this company?
-we are becoming a more data hungry world - need actual data for powering everything - **ID-J-Situational Analysis**

- Machine learning; AI, Marketing
    - Whom are your customers
    - What Problem are you solving for them
    - Where you committed full time to the project from day one?
    - WE saw that the physical graph (real-world graph) of data was missing - how are people and places interconnected and how are they related to physical locations and to each other in physical locations **ID-J-Situational Analysis**
        - So they set out to build the graph.
- Their beachhead was the marketing world, as it is a world that is accustomed to take user data and taking those insights and turning them into revenue. **ID-J-Exposition**
    - They built the graph by making sure that all the sensors in the world were created to one platform
      ID-J-Job Spec
        - GPS is not accurate enough but sensors solve all these issues. **ID-J-Observation**

Ideation:

Can you tell us about the process of coming up with and implementing the idea of a tech company in Norway?

- Thomas and I were part of the founding team of Tidal - so had their first taste of Global business which was really important for seeing the realm of possibility, there is no point in creating something if you don't see the possibility of what it can be. This

was very important so that we could have a broad perspective of what was our idea. **ID-N-knowledge**
    - We also saw what not to do - tidal started the same time and style as Spotify but without all the resources available to them **ID-J-Exposition**
- Previous Experience was a huge part of the ideation phase, seeing how we failed with tidal and how to interpret possibilities, resulting in us going through the ideation phase of Unacast in a very clinical way. **ID-B-Recombination**
- we were not solving a problem based on our own experience -the innovation was that we had these experiences and we want to do it, so then what are the industries that are ripe, taking a very clinical approach to it looking at various industries examining the most potential and then just dived into them. **ID-J-Observation**
- They had a few ideas - one in movie distribution; sensors (apple had just launched I beacon - 2013); they saw the potential in this. They had just launched a few SDK's and API's. **ID-N-knowledge**
- Thomas read articles about it and we just dived into it, saying what if this isn't just another protocol or trigger for more notifications, what if the world was starting to sensor up **ID-J-Observation**
- There were many thousands owners of these sensors, how could we get them onto one platform, we based the next steps on an urge to do something, partly on our previous experience, and how we had failed, and a clinical approach to the possibilities out there **ID-B-Recombination**
- Norway was still new to innovation as a whole - it was not as clearly defined then..
- We did this one because of altruistic reasons - Norway Needs This; and 2 because we were the first to do this, the first to money, to talent, to exposure, pr. But the timing was right. **ID-J-Exposition**

So in line with this can you tell us what the dates where for starting the company, when did you leave tidal? And did you commit full time?

- Left Tidal September 2014
- We believe there is only one way to start a company and that is to go in 100%.
- Prior to this there was discussion during the summer 2014 to discuss and define the facts and see if this was doable. As soon as we came to a point where this was getting so big so do we shut it down or go all in, we went all in. **IT-B-Adaptability**
- WE bootstrapped (had enough capital to last about 1year), so we knew this was something we could do without having to take a part time job that would kill our ability to succeed. **IT-B-Making Do**

Was this analysis before or after you founded the company?

- The analysis of the industry - due diligence - was before founding the company in our spare time **ID-J-Exposition**

And what was your and Thomas' Educational background and connection to each other?

- We met in Copenhagen at business school **ID-N-Knowledge**

Were you aware of the steps necessary for you to turn the opportunity into a workable idea?

- This was totally new to us, Tidal was already a stock listed company, so we had to learn it, but we actually feel that this was the easy part, we kept it structured and took the steps necessary **ID-B-Adaptability**
- We had experience from working in a structured manner, taking steps to get somewhere and we had experience from global business - so we knew how to approach it, made it less scary.

Did you make sure that each step was completed before moving onto the next step?

- It is not possible to take it step by step when starting a new company, the borders are more liquid **ID-B-Adaptability**
- You approach the tasks in a planned manner, it is allowed to break the rules if you have rules
    - It is allowed to do something unplanned if you have planned something. **ID-B-Adaptability**

Did you look at the products that were in the same industry (potential competitors) believing that your solution was better than that?

- We looked at other industries as this particular industry was not formed yet so there were no competitors
- We more looked at what would big platform companies would do here (Facebook, google) examining the strategy so that we would not be pushed out of the market if they did something in this space - which is a real issue when you are starting a company if someone takes it. **ID-J-Observation**
- Spent some time crafting a position that would navigate around what these platform companies did and what happened in technology **ID-B-Adaptability**
- We saw beacons as just one part and a hint of what was coming - the new technology was the rise of proximity technology or sensors - we could quickly detach from one specific tech, and hardware as a whole **ID-J-Exposition**
- Wanted to be global born - with hardware you have an issue with this so we stuck to pure software company.

Did you find it important to approach people and spread the word behind your company?

- Yes we did this a lot, not in the ideation phase but as soon as we started, we have been very focused from the start, talking about what we are doing (blog) - as it is a new industry we need to spread the word about it, but also because talking and talking begins a narrative which attracts capital to your company. Talking about it made it

real - not the sketches or prototypes, it made partners and investors and applicants come to them and it helped them to believe in it. **IT-N-Resources**

How long was it just you and Thomas?

- The first 3-4 months, until September 15 when they launched then they got Martin (Full Stack Developer) - this was in the prototyping phase, the first couple of months was just stories and sketches. **IT-B-Making Do**
- They knew martin from the music business - he was in our network
- They raised their seed round in May-June 2015. Then we started hiring and paying salaries. **IT-N-Resources**

Iteration:

When you started building the product did you think about the potential it would have for customers - looking at their struggle with data or what was your idea?

- When you build a company you are constantly making mistakes, whatever the reason so when you are building one you have to build one that can handle this, that is agile and flexible and accept a lot of failure. **IT-B- Adaptability**
- We build a CMS to showcase to first customers on how to use sensors to trigger certain reactions - full beacon management solution - COMPLETELY WRONG but right in showing us what was in the industry and the realm of possibility - not used any more **IT-B-Making Do**
- We started to build our first API solutions - we ingested data from partners into our solution and then out again. Not used anymore, didn't work for us. These prototypes are not even close to the solution we have today **IT-B-Adaptability**
- We were prototyping as a narrative - to show customers (and us) what we can bring from this technology. **IT-J-Situational Analysis**
- But if I were to start another company I can see that the things be built now are not good, they will be replaced in 6 months
- What do you need to solve just now and not over think what you need to solve in a year
    - We did it many times where we have built something too robust, too full scale when 10% of it is all we really need **IT-B-Making Do**

So do you just focus on the 10% now?

- Yes when we are looking at new potential we build a pyramid diagram:
- Tech is at the top - smallest part - least important
- Processes to understand what to build and when to throw something out - how we are thinking about architecture - how easy it is to change **IT-B-Adaptability**
-

- The most important is culture/people - this will always remain - our company is not building a tech company on a proprietary algorithm or anything - it is not our core API, it is more of a tool of achieving our commercial goal as oppose to our end product. **IT-N-Knowledge**

You have currently a product that you have received feedback and money from - you have customers now?

- We have revenue but we still split our focus on keeping customers happy and still looking for and developing opportunities **V-B-Adaptability**
- We are focusing on marketing industry now but this is not our end goal. We have to constantly evolve our product and product offering to be appealing to outside industries **V-B-Adaptability**

You started born global but was this due to seeing restraints within Norway?

- It is because our customers are in the US and of course because there are only 5 million Norwegians. It was very easy to make this decision and more Norwegian companies should. **V-B-Adaptability**
- Plus from their experience in Tidal where they spent too much time dealing with the Nordics in a country to country methodical way. Spotify out did them with 20 countries when we had 5. **ID-B- Recombination**

You mentioned many iterations of prototypes that are dead, from which point did you stabilize with the current product?

- Late 2016 (Q4) - Oct Nov. it is the last stable framework but will probably be thrown out **V-B-Making Do**

Validation

Whilst you were building and rebuilding prototypes, did you have any customers? Based on feedback received from the prototypes did you change the product immensely - or was it necessary just to adjust it

- **How did you retain these customers**

- There has been a couple of tiers
  - Build an industry and make a dent in a larger marketing industry
  - Working with PR and blogs twice a week
  - Created a sister product that was an industry directory - building a de facto tool to understand what was going on **V-B-Recombination**
  - Thomas was in San Fran, and he asked one of our customers how many do you think we are in staff and the customer was guessing between 150-200 people, So we managed to create some sort of image showing that we were bigger than we were actually are, but this only takes us so far. So when we settled for New York and get into the Monetisation stage we started to actively hiring people that had the network that we lacked.

- Our CRO - very connected in NY. **V-N-Resources**

    - That is the two clear phases - marketing PR, building position and then hiring the people
-

How did you pitch your prototypes to customers in order to make them see its value? Do you focus on your customer or address problems for the end user?

- We have focused on the new possibilities that we give them - the ability to make them better - there is no emotional component to our product, we are not a heartfelt product **V-J-Job Specs**
    - This was one of the struggles from the start - building a company that is very hard to communicate, so we have spent a lot of time finding the right recipe for that. **V-J-Job Specs**
    - To customers we were saying that we can make you better both product and company wise

Are you replacing a current solution?

- 2 things - status quo as it is not really there - how can you be precise if you don't know what your customers are doing in the physical world - and then we are replacing GPS which has been the de-facto tool for getting location data. **V-J-Situational Analysis**
- We were also saying that we are the future what you are doing today is the past, we are presenting something scalable and future proof - we use parallel to mobile - a lot of people sat on the fence saying we will see what will happen. It is a whole new way of building products - having access to these micro moments in the physical world is not just a data signal, it is a whole new way of building and reaching products and customers, how do you reach people that are holding a Nike shoe now. We are creating a sense of emergency and also FOMO as well as a risk - scaring them **V-J-Job Specs**

You had your seed funding, did you receive any more funding throughout the process?

- First funding was late 2015 (innovation Norway) - 1 million NOK
- Seed 1.6 Mill in May
- June - 5 million - round A
    - Before this we didn’t have any robust revenue, it is only the last 4-5 months that we have started to monetize
- This funding is being seek in the US
- We will raise our round B in the coming Summer.

- We believe our industry is a winner takes all industry - we have seen what Spotify did to tidal now we want to be the Spotify.
- So we need a lot of capital

We consider Norway as a Resource Constraint environment, not just because of money but also talent

- Norway is the perfect laboratory, there is a lot of money here, not a lot of VC
- Highly skilled labour force
- Trusting environment, very easy to get the first prototype up **IT-B-Making Do**
- Young entrepreneurial community
- High loyalty
    - It does make them a bit more traditionalist as well
    - But if you treat Norway as a laboratory you will get your first prototype or market but as soon as you have that you get the fuck out. **IT-B-Making Do**

Expain

Thomas Jakobsen
Date Of Interview - 08.03.17
Length of Interview - 30 minutes
Mode of Interview - Face to Face

We introduced the topic of our thesis and what we were hoping to achieve.

This is just a transcript whereby the most important aspects of the interview (in our opinion were written down in point form (all bold writing is when we spoke).

Can the theoretical frameworks of JTBD and Bricolage help explain the exploration processes for innovation of companies located within resource constrained Environments.

Can you tell us about your background, where you started, whom was part of the founding team.

Ideation:

- We started 1.5yrs ago
- Builds on technology Thomas and his brother since 2012 **ID-B-Making-do,** . Expain Thomas and his brothers background
- Thomas – Physics and Mechanics Instrumentation
- Brother – Mathematics

Biomechanics - 2007

- Research & Development with Sintef – measuring muscle activity **ID-N-Knowledge - Expain**
- Done Secondary Research on this as well **ID-J-Observation**

Then Met Sverre from Unikia that helped them to commercialise the product for the average customer, turning a 15.000NOK product into at 1500NOK product.
Became Expain in October 2015. **ID-N-Resources**

- Was started by Thomas and his brother with influence from his father who got the idea from having physical therapists visiting his laboratory **ID-J-Exposition**

Can we talk a bit more about the idea that your father had? What was he working on and his background?

- He is head engineer at the lab in movement analysis at Norwegian Sports University in Oslo - there they have lots of equipment for analysing movement.
- Big Equipment measuring EMG for muscles **ID-N-Knowledge**
- He had been doing this research on all sorts of athletes, on how to improve performance but also how to examine muscle pain.
- He showed a group of physios around the research labs one day and the physios saw the equipment and believed they could use this technology for their patients but was too expensive **ID-J-Observation**

What was you and your brothers background?

I have a background in instrumentation and mechanics, electronics, physics and my brothers background was from mathematics and programming

And Before these physiotherapists came to your brother you were already trying to develop the technology?

So then we had a company called Biomechanics – which made some development, we had made force plates to measure very accurately how high you can jump. And we were importing some equipment from Sweden and the US to help with our research. **ID-B-Recombination**

- - Biomechanics is still in existence, we still do some importing and exporting through this company.
- Main focus is still Expain **ID-B-Adaptability**

Just to recap on what your father was doing?

Ideation Phase - Father Developed from point of view of measuring but could not get too much data - using product from US for research and measuring, they wanted to take it to the next level so that it is easier for people to get something valuable from the machines. **ID-B-Adaptability**

How did you meet Sverre?

They Met Sverre through Connect Norway at the Spring Fair where they presented their case for 15mins and Sverre was one of the Investors, they pitched as Neck Graph but started the new company Expain with Neck Graph owning 50%. Biomechanics was the family. **ID-N-Resource**

Iteration

When we started in 2012 with Neck Graph (the company before Expain started in 2015) – soon hired a third man – specialist in mathematics and programming – met him as a childhood friend – could do some programming of the controllers used for Expain products which was essential – got shares **IT-N-Knowledge**

Starting a new business, how did you go about learning the business aspect?

Starting a new business – the business aspect – we had worked for our father's small companies, we had learnt the business aspects and learnt for ourselves along the way. **IT-B-Adaptability**
Most of the work was done internally between Me and my family. **IT-B- Making Do**

- We would only externally buy components from different venders

Did you try to get investments:

- They completely backed the company (Neck Graph) themselves, having organic growth. **IT-B-Making Do**
- It has stayed this way.

- Sverre Invested In Expain 300.000 and so did we to have the starting capital, and we also borrowed some more money to help launch the products last Christmas. **IT-N-Resources**

Now that we are into Expain, did you identify the behaviours of the user:

- We started to focus on customer already in 2013 when we had started to develop the product together with Sintef
- At this time the smart phone was coming out as more interesting
    - In the beginning we were planning to make a program for the PC so that the computer worker would get a notification on their screen
    - Soon realised that we needed to adapt to an application **IT-B-Adaptability**

- All along we had conversations with our users to see how they preferred the data to be shown
- Had a larger study with DnB to see the tech and what was important for the customers **-IT-J-Job Spec**

This product started when? (Shows us a prototype) - How did you switch to having several products as opposed to just the one.

Expain - Started in 2014 with the neck prototype, now with the shoulder attachment as the latest version.

Did you identify the needs of the user?

- Read research done by National OHS Research on muscle activity measurements
- They had seen correlation between how much pain is experience and sustained muscle activity. **IT-J-Job Spec**
- The main help from Sverre was to make the product more designer friendly and easier to commercialise

Can you recall some of the biggest issues when creating and presenting these prototypes?

- Hardware and how to make it easy to communicate the product to customers - what it actually did

How did you overcome this?

- Hardware - stayed in close dialogue with the production company **IT-N-Resources**
- Communication - talking about how to explain it to people, how they can understand the situation - how to explain a new concept - **IT-J-Exposition**

Validation:
Did you try to reach them on an emotional or functional level (customer pitch)

- Very early on after meeting Sverre we started to meet big retailers - Elkjøp etc. to them we of course said that this is a big problem, 30% of Norwegians have shoulder problems - gave the retailers faith in our products by our expert panel - showed them the studies we had done
- Also received the credibility from Sverre as he too was a supplier to these retailers
- He knew from the beginning that they could pull this off immediately **IT-N-Resources**
- So the retailers committed to a first purchase, giving the product validation on all the products
- Besides the money they invested was based on revenue. No Investors

Was it difficult to acquire any resources

- The massage products were a little issue as Factories in Norway do not make these products as it requires too much manual labour **IT-B-Adaptability**
- They also changed the analysis product slightly as it was difficult to get the PCP
    - Made it easier to connect the product manually to the body, and with cheaper production values **V-B-Adaptability**
- It is still just the core team and Unikia, having production done in China

Are you looking at Competitive Products

- we are developing a second version of a few of our products to stay competitive in the market, as well as developing 2 brand new product s that currently would have no market competitors - **V-J-Situational Analysis**

User Need Identification - What are you thinking about when creating these new products

- We rely upon both the research of others and also on university and expert inputs based on the products. **V-N-Knowledge**
- We do market research questionnaires - 300 responses - to check cost structure
- Specification of the products - battery etc. **V-J-Observation**

Thinking and focusing on how to reach the customer, emotionally, the features or functional needs

- we are still working on this, as for instance it is not good to focus on pain when marketing
- If you want to get people to get rid of pain

- Need a positive word **V-J-Job Specs**

Function

- We name it to explain what you get by using it
- We use a pain diary in the app as well so you can follow the amount of pain

Word of Mouth - how clients recommend to each other

- Big and very important for making the products - we have not been able to do anything else but to create these products that people want.

2007 Biomechanics - no startup ecosystem - There was no external help in the way there is now?

- The change has not really helped with promoting the products.
- Has all been internally done through Unikia

Marketing is important for this - We have used Shifter.

What are the current solutions you are changing with the introduction of your product?

- We could be able to replace the physio therapists, if our product is a hit and our app can teach you about muscle pain
- IT is a substitute for pain killers,
- We reach the customer this way but they say that Expain can help you with innovative technology instead of medication, but they are careful as they sell their products through pharmacy's - **V-J-Situational Analysis**

They started Nordics and then move into Europe

- Not because of Norway's limit as it will continue to grow for us but it will grow faster if we expand.

Customer Loyalty and Traditional Behaviour -

- Massage devices are used by Norwegians,
- But the new products like the muscle analysis take a long time to sell.

Unikia is helping them to sell in Estonia

Vibbio

Marianne Bratt Ricketts
Date Of Interview - 13.03.17
Length of Interview - 40 minutes
Mode of Interview - Face to Face

We introduced the topic of our thesis and what we were hoping to achieve.

This is just a transcript whereby the most important aspects of the interview (in our opinion were writing down in point form (all bold writing is when we spoke).

Background around how it started, whom the customers are etc.:

- It started because of a frustration Stine and Marianne had **ID-J-Exposition**
- Prior to Vibbio they both worked in an innovation magazine - Marianne was an editor **ID-N-Knowledge**
- Looking at the pros and cons of the whole innovation circle in Norway
- Once they started to see the scope of the changes - especially technology that was opening up
- Saw a quite scary gap in the middle - people developing and creating the changes - knowing what the possibilities are and how to stay ahead. Then you have normal people at the other end of the scale being left behind as they have no idea how to take part or understand what is going on - it is insurmountable
- There needs to be a format so that you can at least stay updated.**ID-J-Exposition**
- We believed video has a natural way to create engagement, be inspired. If done in the right way it is very simple to take away some knowledge once you have viewed the video. **ID-J-Situational Analysis**
- We did a lot of research into how we concentrate when we live such digital lives **ID-J-Observation**
- Lots of research in the US that said we concentrate in very short amounts of time, because we have so much input, even once we are interested we only stay focused for about 1min15sec **ID-J-Situational Analysis**
- Gave us a great starting point - if we can do something very specific in 1 minute.
- Our Vibbio became the term of a 1min long knowledge building video **IT-J-Job Spec**
- We started very early on playing with the format - what can we do and what do we have to do **IT-B-Making Do**
- We checked how people use online videos **ID-J-Observation**
- 93% people watch videos without the sound on so saw it is necessary to have text on the screen everything.

    - Had to explain this to people, that people are not reading less and want more video- it is all about how you package it all and put it back together. **IT-J-Situational Analysis**
- We were texting everything, and seeing all the people watching videos without sound gave us the opportunity to layer with nice imagery, but the text is the weighted bit and adding simple animation that people find attractive when watching and reading. This way It becomes a smart video. **V-J-Job Spec**

Iteration (Very soon after Ideation)

Early January 2016 we sat down and knew fairly well that this is what it was going to be

- We're not focused on people buying it or ordering it, just going to build an online channel where you can start to follow our page or channel and get inspired and understand what they otherwise could not.
- Within 7days of posted very simple videos, there were not good but they had all the elements - putting away our sense of perfection and kind of go, it is good enough just get it out there. **IT-B-Making Do**
- But quite a few Norwegian companies came across these, especially IT companies, wanting to order the videos for themselves, this was actually a small issue as they had not planned to do it this way. Theirs idea was to be a journalistic channel, and they were not supposed to be paid for producing videos to customers. So one week after setting up the original Vibbio, we set up Vibbio productions. **IT-B-Adaptability**

So the ideation process that was kind of from magazines?

- We spent the whole time from early November 2015 to January - just kind of going - this is what it is

Were you at StartupLab at this point?

- No, I knew and had interviewed Rolf quite a bit and sent him a msg early Dec. and said I am quitting my job and do this and he said you guys can move in and get going, but we didn't straight away. **ID-N-Knowledge**
  Stina (Co-founder) was my employee, she quit first. When we met Stina she was a exactly a copy of me when I was 24. She was wasted in any other job which was sad call-calling, she is forward leaning and a sales person. **ID-N-Knowledge**
  - We both quit at the same time - left the magazine
  - They were both very forward leaning and super curious - felt wasted where she was just sat in some job cold calling, Stina can sell anything
  - Didn't miss a heartbeat when going for the idea, jumped straight on it with no fall back, little money, just enough to set up the company **ID-B-Adaptability**
  - I knew that this was going to work fairly well, didn't know how to monetise it but knew we would quite quickly to. **IT-B-Making Do**
- End of January they had two companies. Vibbio and Vibbio Productions
- Vibbio Productions had a customer after 8 days of starting (Crayon) **IT-B-Adaptability**
- We are not very typical Norwegian, we will take the backside off of what we think we are going to sell with no evidence to show for it. But managed to convince the guy in charge of the Nordic Infrastructure Conference (NIC) that they can do all of their communications. **IT-B-Adaptability**
  - They hired freelancers and did anything they could do with the resources they had available to them. 14 videos of whatever they could do
  - We were going to build 5 series meaning they would have online com going for the whole span of a year. **IT-B-Making Do**
- They signed for 600.000 in 2 weeks.

- This first 5 films were their first prototype and it was sold.
- We made 5 teasers that would be able to communicate our idea and make them fun. **IT-J-Job Spec**

- So the **Validation started** with the sale of your first prototype

    - We signed with them right at the end of January. Worked on the job right at the start of February
    - This was based on just us explaining it and sketching it, we had no product to sell.
    - The prototype was essentially in our heads - we focused on how you need to think when doing video.
- Spoke about the elements that video had to have including text and people recognize it's a great idea that wouldn't have thought to do it because it comes from little bits of information that I knew. **IT-J-Job Spec**
    - They got it as they would not have thought to do it but understood why **IT-B-Making Do**

Did you acquire these skills whilst you were at the magazine?

- I have worked as a graphic designer for years, I started in London, early 2000, and ran my own design agency, I have started a business with my husband 2002 - building up a chain of ski schools in the Alps. Doing a lot of very different things means that you build something that feel there is a market for and you go from there. **ID-B-Recombination**

You wanted to communicate this product at the magazine, but you wanted a better way to do it?

- Yep so I have never wanted a normal job, I created a print magazine for this online magazine, and when they asked me to come on-board I said I would do it if I could change things for them. They held me back when I came to them with video, they wanted me to create something for the future but they held me back when I wanted to create video which is what I saw as the future. We have to do 80% video and they didn't get it. So I left them with what I had done. I didn't want to just run an online magazine, I did research because I knew the whole media area was changing to a point where it is completely different. **ID-B-Adaptability**

This is good, because it shows how you were exposed, how you observed the situation:

- Yes so I did a lot of research on how the media is being received and how it is changing,
    - It is changing to something completely different **ID-J-Exposition**
- I spent a lot of time looking abroad to what other magazines are doing **ID-J-Observation**

- In 2015 She attended the innovation week talking to international people coming to Norway, other media companies and press and seeing what they were doing and they all came back with a big question mark (?)**ID-J-Situational Analysis**
    - So you could see that nobody had really taken on board the massive reach of the change **ID-J-Observation**
    - All you were left with what the media wants to do but more importantly with what the people actually want and how they consume. It's not about what they media want to do, but how people are out there and come at you. **ID-J-Situational Analysis**
    - Vibbio managed to change that aspect very quickly **IT-B-Adaptability**
    - We managed to tap into the people at the other side of the table, because it was fun to them rather than scaring them shitless. You could actually start to learn **IT-J-Situational Analysis**
    - **Definitely, it has been a chain of events**

Which events do you recall were important during this period?

- To me having the ear of people like Rolf, has been very nice support. A few other startups that we have been in contact with - I helped with a lot of design in Bubbly, and knew them and being able to kind of be in the environment of all these tech startups, even before I knew I was going to go down that road myself was very helpful. **ID-N-Knowledge**
- It has been a weird process when building talent - we didn't make the story about us, people could really have anything behind Vibbio - so early on no one even knew it was us - I was just trying to tell people that they need this kind of communication **IT-J-Situational Analysis**
    - Innovation Norway for instance when I was meeting with them showed me a Vibbio and said this is what we should do…….
- A lot of young people had this idea of Vibbio, so when I was on podcasts and things early on we were getting amazing talents calling up, not asking for a job but to just spend time with us.
- Head of Marketing Tana, came on board early May. She already had a job and doing her master's degree and she just made time and within 4 weeks she was just one of the most crucial people there. She was a marketing genius and what she didn't know she would find out. **IT-N-Resources**
- We have had a big internship program - 70 people apply for 5 positions.
- Tana headed this program. We had 5 very different areas in our organisation for people to try out.
- This was September to December for the interns
- The founders till April, then production guy employed in April. Mostly it is the same team changed out 3 times.
- We went from 2 -12 over the course of last year. Majority finding us

The real struggle was when we made the decision to go into developing our own technology - we needed tech people and we had none in our little surroundings, but we were close with Karin in No Isolation and she had a Best Friend who was in IT and she loved the whole idea

of Vibbio coming on board as tech lead and brought someone with her that was teaching with her at the university. **IT-N-Resources**

Customers and Clients Validation and Funding:

- We self-funded us for the whole of the year, receiving funding at the end of the year.
- Not because we needed a lot of money **IT-B-Making Do**
- We needed to raise money to start building our own tech. The long term plan for Vibbio is not clear yet, we are movie from media/production to video tech company .22March launching Vibbio Express. **V-B-Adaptability** Just now developing a very simple uploading service. Taking the costs of producing and dedicating to the editing that is the tricky part that people cannot make. **IT-J-Job Spec**

You show that you are very flexible in that you adapt to what your customers' needs are,

- I think the essence of it is that smart video is just very smart and that any company cannot chose to not have video as part of their marketing strategy, simply because their numbers are against you. Social Media is being carpeted in video, Within 2 years 80% of internet traffic will be video. Making it simple and simpler and less and less expensive for everyone to join the game **V-J-Job Spec**
- You will be invisible if you don't have video.
- We are disrupting ourselves as we go but that is the best way to do it. **V-B-Adaptability**

As you are going you are discovering what are the means that you need to acquire to stay ahead

- So we raised 1.5Mill at the end of the year to fund the initial setup of the tech team and give us a little freeway**-B-Adaptability**
- We have never had a burn rate so it was not that we were running of red numbers at any point. **V-B-Adaptability**

Are you acquiring customers just in Norway?

- We have main customers in Norway, Stine has moved to Copenhagen now, and then spinoff just spreads to the rest of Scandinavia. Stine moved there 3 weeks ago mid-February. **V-B-Adaptability**

Are you expanding because you feel that Norway only has so much to offer?

- In a way yes, but also the long term plan is to create something that has global potential, and doing manual video production is not scalable so what we are taking abroad now is Vibbio express, because of the price model and most markets outside of Norway are a lot more price sensitive. **V-J-Job Spec**
- We force most Norwegian companies to communicate in English. They should have a reason why they shouldn't.

The main reason why we had to shift very quickly was because we got a very serious German on board in February - the chairman of no isolation. Martin Hauge.

- He says plans change - he believes in the long term potential. But stated that it does not matter if we have proven ourselves in our home market, it does not count as we know people so you have to move to another country. **V-N-Knowledge**
- So Stine is in an incubator in Copenhagen. We pick incubator because of the networking capabilities.
- He has a massive network in Denmark - it was an easy kind of first test, except that Danes are very particular people, they need to see value for their money. **V-N-Resources**
- You need to get a local on the ground so we will hire a country manager there. It is only to prove a point and see that we can sell outside. **V-B-Adaptability**

It is good that Stine and I are so different in age and stage of our lives, it means we are more adaptable to any situation and willing to go for any opportunity. **V-B-Adaptability**

If you will consider talking with a customer, what is your current pitch, what are the major pain points?

- Three main points - massive tech changes - most don't understand, so not managing to make good choices. Probable massive problem for most people. A lot of 'Kodak' moments going on unless people manage to get forward, and a lot of people concentrate in such short moments.
- So companies are having this problem making the assumption that because they have something important to say that they have a really great product that they make a mistake that they try to sell it in these massive big long videos, because not all videos are smart, and they end up wasting money. The production companies at the other end are showing how outdated they are because they have this product for no audience **V-J-Observation**
- Most companies should focus on building knowledge instead of advertising and they need to do lots of little jobs.
- When you teach something people actually get more from your advertising. T **V-J-Situational Analysis**
-
- Just give it away. People will build your trust **V-J-Job Spec**
- It is fairly easy to sell because we pitch based around how we use the online space - just use what you have upstairs.
- The idea that we actually demonstrate what we are after - the circumstance, the product can always change we can always get better, being trustworthy and sharing, people are always looking for input **V-J-Situational Analysis**

You have explored every opportunity presented itself, but what about any issues?

- I never view them as issues, rather as challenges - we are super happy outside our comfort zone, I stood at She Conference and told people we knew nothing about video but started a video company, we knew nothing about tech but started a tech company. We learnt and learnt, it isn't like the old days where you had to be an expert and have every single answer. You can find the answers **V-B-Adaptability**
- You have the experience from all different industries you just adapt it to this new situation, you are building something that does not exist. So there is no need to look for a recipe, it isn't going to be there. It is just a matter of not focusing on problems, it is not problems just challenges. Challenges are good.. **ID-B-Recombination**

FlowMotion

Didrik Dege Dimmen
Date Of Interview - 15.03.17
Length of Interview - 40 minutes
Mode of Interview - Skype

We began this interview talking about different design and entrepreneur frameworks.

We introduced the topic of our thesis and what we were hoping to achieve.

This is just a transcript whereby the most important aspects of the interview (in our opinion were writing down in point form (all bold writing is when we spoke).

Can the theoretical frameworks of JTBD and Bricolage help explain the exploration processes for innovation of companies located within resource constrained Environments.

Background:

- So the story started with an external idea owner came to them with the concept of stabilising a camera using motors - in particular a GoPro camera. **ID-B-Recombination**
- We found a similar solution from a Chinese company and adopted a bit of their solution and formed what was a first version of the "Flow Stick". **ID-J-Observation**
- Started to look at how this product could go from being hand held to mounted the biggest issue being where to put the battery as it was in the handle. **ID-J-Observation**
- Started testing how it could be done. Didrik came in at this time - as a professional BMX Rider and GoPro user, and he joined as a kind of customer showing what his needs etc. were. **ID-J-Exposition**
- First big innovation was taking the handheld product and adapt it as much as possible to how a GoPro would normally be used without the stabilizer.**ID-J-Observation**
- The idea evolved gradually.

- I met Lars, one of the initial co-founders because after 3 years of a master in electrical power engineering. I switched to NTNU school of entrepreneurship where he was a student in the year above and we got introduced as classmates. Lars and the other co-founders were making a product for Go-Pro and I was working for Go-pro so we started talking.. **ID-N-Knowledge**

We are looking at the process in which the idea evolved, signal the events in which you were exposed to the pain, to the actual problem. It is relevant to understand that you are actually in the position to understand the needs of potential users as you are a BMX rider. That exposition is one of the keys we can identify. The second is the observation and found out how people are solving the problem with other products and how these are relevant for the JTBD.

When did the company start:

- Met in august 2015, Lars and Eirik met in April 2015. This is when the idea had started. Very early conceptual phase.
- Company started in January with Lars and Julie (left).
- They had no technical skills until they got Eirik on board who was super hands on. **ID-B-Recombination**
- Switched to phones in October 2016.
- Eirik joined the team through a job listing. **ID-N-Knowledge**
- Feb 2016 was first round of funding. Up till then it had been some competitions etc.
- Sold 8% of the company in crowdfunding for 1Mil NOK, this is from techno port - private listed company **ID-N-Resources**

Up till this point what were people's commitment to the company?

- It was varied, it was definitely not a full time thing - several team members had other responsibilities.
- Eirik - Spring 2016 writing Master Thesis. Slow progress. So did Lars & Julie.

How did you overcome these time constraints?

- It was a low period where we did a lot of other stuff - travel, school, vacation, had no salary so things were kind of fluid for a while. We didn't solve it, things just got out of hand. Didn't hang out at the office together. Progression was slow and when I had time left over we would do a lot on our own. When we had events like the expo in Munich and Crowdfunding events, we would work really closely on this project**. ID-B-Making Do**

Prototyping:

Did the team go to the prototyping phase 100% with the original idea?

- We started prototyping super early. We got a 3D printer and tested out different designs. **IT-B-Making Do**

- It evolved with time, it was the innovation, we should have the battery in the handle and then not
- It was super lean - followed the concept of the product all the time. **IT-B-Adaptability**

I suppose many were scrapped but some were presented to investors and to people…

- There was a lot of mock-ups and lots of trips meeting athletes etc. often there were issues with them working, had to quickly throw things together to make them work for demonstrations. Was messy but we just wanted to produce something quickly to try and show the concept **IT-B-Making Do**
- We always try to deliver on our promises and we promised a lot of things.
- We are always pushing the limits.
- Some events had good-looking prototypes and some were horrible looking.

What made you change from going from gopro to smartphone?

- GoPro came out with their own product. So we changed the plan. We had always planned to do smart phone second after the gopro so just switched focus. **IT-B-Recombination** People still wanted our product over gopro but we just let it go.**IT-B-Adaptability**
- We jumpstarted the idea skipping the gopro stabilizer. The gopro stabiliser was similar in many way and not in others. They could not mount theirs. But still go pro could shut us out from ambassadors and suppliers etc. **IT-b-Observation**
-
- We switched to phones and focused on that, which was a good move because now we could utilise the phone technology introducing an app that could do more editing etc. than what we could do with a gopro. **IT-J-Job Spec**
- With digital editing options we could focus more on people making videos. **IT-J-Situational Analysis**
- Smartphone cameras are better in many ways.**IT-J-Observation**

WE see a lot of adaptability in the process you needed to reinvent yourself with the resources at hand in order to survive.

- The first prototypes for the phone we used the gopro one and just had to make it fit.
- You were always willing to change the features, this is very visible in that you changed the entire product at one stage to fit the need. **IT-B-Adaptability**

How did you find the resources (people) to do the campaign for kickstarter how did you guys find out about help,

- Throughout the whole process there has been so many people involved both big and small with advice, outsourcing and etc.
- Lars and Julie wrote the master thesis on crowdfunding and interviewed and learnt a lot from crowdfunders. **IT-N-Knowledge**
- We hired a company for making the movie and taking pictures, advertising and some mechanical designs.
- Found them by searching for them
- We had several mentors.
- We were in an accelerator program **IT-N-Knowledge**

Validation

When you pitch the idea to potential customers with the gopro was it different to how the pitch was with the smartphone?

- **Every**thing changed, gopro was too easy - people loved it - there were so many ambassadors - people understood the problem, **V-B-Adaptability**
- But now stabilisation is not even the biggest problem it is the way the app can make the flow of the camera so it looks like super good quality cinematic footage. **V-J-Job Spec**

When did you guys decide to start producing the final product

- It is still going on as we need to change some things for production, as it is a pretty heavy process, as we need to do some design for manufacturability
- It was early 2017. Just at the kickstarter launch. **V-J-Making Do**

You found the resources that you needed to execute the validation. Would you consider the success of kickstarter as a validation. You completed the whole journey from idea to product and you are ready to continue

Regarding pitching and marketing, how do you do it, do you focus on what the camera does? How do you frame yourself as a solution when you are trying to acquire a customer?

- It depends on the channel we do it through, everything is adapted to the channel and the context. **V-B-Adaptability**
- We focus on the experience. What the product will give the customer in terms of value.. **V-J-Situational Analysis**
- It is not that the stabiliser will stabilize your phone but that you can now make cinematic quality videos with your phone. **V-J-Job Spec**

We understand the focus on the features it provides but you frame it on the experience customers can have with these functions
Do you benchmark yourself against the gopro competitor?

- We don't actually see them in the same market actually, we can do a lot of the same things but this product can do a lot more, as to be honest we don't care much about them, we are not going to be super action sporty. We are benchmarking against other Phone Stabilizers **V-J-observation**
- We are going to be more adventure, everyday person getting out there and going on bikes. **V-B-Adaptability**

UpWave

Terje Torma
Date Of Interview - 15.03.17
Length of Interview - 35 minutes
Mode of Interview - Face to Face

We introduced the topic of our thesis and what we were hoping to achieve.

This is just a transcript whereby the most important aspects of the interview (in our opinion were writing down in point form (all bold writing is when we spoke).

Can the theoretical frameworks of JTBD and Bricolage help explain the exploration processes for innovation of companies located within resource constrained Environments.

We found that within this interview it did not flow through the phases as is what happened with some of our other interviews, as such the transcript has less structure which we solve with our colour coding.

How Norwegian born companies have gone from the process of taking an idea to the market and then validating it.

Why you started it, who you feel your target customers are and the team?

ITERATION

- WE started the current version of our software UpWave was started about 2 years ago as a prototype, and we wanted to add in all the new technologies that had come into our previous version which is 6 years old.
- We want to make it as simple as can be, the product. Not cluttered in any way
- WE found current solutions bloated and a kind of old fashioned style of thinking
- So we approached new teams and businesses that had not started using these other modern tools so that they would use our modern tool first.

IDEATION
How did you guys (the founders) know each other and who was it from the beginning?

- We all started it together, from our previous product - We have a long history of about 10-12 years, from working on our previous product.

We consider the Ideation stage, anything that you consider was the moment in which you decided to start a company, so can we back track a little and look at how the first company came about
How did you come up with the idea of let's make this easier?

- A friend of mine had done a PhD on how project management could become better, and we saw that most of the project based tools were around the project leader and not the project participant, and we decided to turn this upside down and focus on the team participants instead of on the boss, make them happy and the boss will be happy. **ID-N-Knowledge**
- This was the initial idea to focus on the small tasks of the team and stay away from project management

- This was the starting of the company in 2007.
- Prior to this my friend who had done the PhD and I started the company with a few other friends. Kjetil the CEO of the company now also went to the university with us. All of us had known each other for a long time. **ID-N-Knowledge**

- 6 years ago we had just started with a first idea. But during the 10 years we have had maybe 4 versions (prototypes) of the product. **ID-B-Making Do**

As you had all this previous work together in a company, when it came to UpWave were you still looking for investment, bootstrapping, making revenue or needed more resources for the team?

- We needed the investments but we already had some revenue from big customers from the previous tool but we wanted more investors to scale up the business.
- We had to every now and then go hunting for investors. We tried it all - going to events etc. even tried crowd funding - one of the first Norse companies to have a successful crowdfunding - this was with UpWave. **IT-N-Resource**
- WE have some investor angels that have helped us steadily for many years now.

When you are assessing through this time the needs of the customers have you always kept to the same focus or have you veered away from that at any point?

- We have shifted from being a tool that could organise anything even your video collection, into becoming more professional within the business market - we went from a consumer model over to a business model in the last 2 years. **IT-B-Adaptability.**

And was this based on customer feedback?

- We had to prioritise, we couldn't be a tool for everything in the world we had to focus, and instead of using a freemium model which attracted a lot of users we wanted to have a trial period with monthly subscription so that we could separate the families who wanted to test it from the businesses who would use it. **IT- J- Job Spec**

- We lost a lot of the users from doing this but got great feedback as well from the ones that were actually using it purposefully.

From the model that I was describing you JTBD, the model or the idea is that you focus on the job which translates into the need and the outcomes that your potential users would like to have of the product, what they need the product.
The idea is that there is a theory on how a company can be disruptive based on the outcomes a product can have. We are looking at the elements of how you can focus on the users problems, define if there is a better way to do it.

- I don't think we have a very high degree of disruption in the products, the more simpler ideas of a product not being in the way of actually doing things, we are a tool for organising, get shit done - focus on the tasks **ID-J-Observation**

- it has to be a joy to use as people are very stressed in a day to day situation, we should have a slow friction flesh hold on what we do
- It is more of a philosophy of the product and the company **IT-J-Situational Analysis**

Did your team change at all or has it still stayed the core team?

- When we made the transition from a Freemium model to the trial model, we changed a lot, our focus switched, we went from analysing different features we were planning on doing to optimising the features we already had. So we got feedback on how to tweak our already functional system and we did a lot of this. **IT-B-Recombination**
- This was a huge shift. Every time we hear a feature request we assess whether it is going to be useful to all our users or if it is a very niche functionality. **IT-J-Situational Analysis**

Have you ever felt that you have been constrained by the resources that you have available to you?

- Resources are very problematic we only have 2 people as developers and so we do everything, from bug testing to maintenance and programming, so of course there is a lot that we really want to do more of, integrations with other platforms, public api's, we have some integration with google we would like to expand on, we envision as big in the future but we don't have resources to currently follow them through.
- It is very hard to outsource them as we have built our own system from the ground up so it is very hard to teach them. **IT-B-Making Do**

How you perform in comparison to other existing products. How do you convert the users, communicate the value of the tool

- We learnt how the other products are being used for anything, and since our last product before UpWave, it was targeted at anyone to do anything, and where they were big we wanted to narrow it down from a single users to focusing on whole real businesses that make income, not just used for a hobby. And as I experienced with other products I see that they had the minority of the businesses segments we were focusing on so we will keep on doing this and see if migration comes our way. We have seen some of this already. **V-J- Situational Analysis**

You are identifying the value of your solutions and identify what the customers are missing and using in current solutions

- The other competitors have so much noise everywhere. We want to target the product to those that are moving into the digital age we want as little noise as possible **V-J-Situational Analysis**.

We want to know a little bit more about the process of creation of the product, it is cool to know that you came up with your own skills and acquired your own skills - you knew you could do it yourself. It is one of the things we want to identify the process. Were you every presenting what you could just to come up with a solution or did you always know we can create this?

- We have some friends in a consultancy firm and they are specialised in the same tech that we use, so we have used their resources when we have needed to save time as you really need to move fast **IT-N-Resources**
- We are really fast learners here and feel that we can do anything, we have that attitude but we still need to outsource some aspects to either gain time or quality in some areas.

How did you get in touch with these friends how were you introduced.

- One of them used to work for us and the technology we use is not widely used in Norway that we use to build UpWave is huge abroad and not in Norway so there is very little network here in Norway, and as it is so hard to teach the core of the system it is hard to involve people abroad. **IT-B-Making Do**

Do you feel that it is good that most tech is abroad and not in Norway, positioning yourself that it is our niche?

- Norway is perfect for a sandbox to develop and test our product, many of our customers today are from Oslo, but on the tech side it is not good here in Norway for our technology. If we streamline our tech a little bit better, and we get the resources to refine it a little bit then it will be much better to involve outside people to work with, but we have not spent much time on documentation as we have not made time, we

just have to execute which makes it difficult to explain to other people. **IT-B-Making Do**

VALIDATION

How many of the previous company moved to the next phase. The step that you took to the validation when you decided to move away from the freemium model, was there a lot of friction.

- I am not sure we just wanted to test it out, I think it was the result that we had to narrow something down, we got more a more users singing up for the free model and we couldn't deal with all the support of everyone using the freemium model, the feature requests were so different, as it was coming from a range of different people. We had to changed our mind and had to adapt so that we knew that the product would move forward **V-B-Adaptability**
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- We got a totally different type of users that would start up, as oppose to validating towards free users, we could remove the fake promoters (family saying this is cool etc.) to people that had to pay so would give better feedback
- It was the same product that was offered for free that we then charged for.

- The freemium model is more for if you want to conquer the world and have investors wanting to give million and millions of dollars then you can do this, but we need revenues.

Emotional Social Functional:

- We want to engage the social factors of how a team functions, that is why we added HI five functionality, so that is kind of our first attempt to get some social aspects, especially if you work remotely but in a team, and if you don't have any social aspects, it will be so much harder to work together so we want to attack that problem. **V-J-Job Spec**

MovieMask

Harald & Eirik
Date Of Interview - 216.03.17
Length of Interview - 45 minutes
Mode of Interview - Face to Face

We introduced the topic of our thesis and what we were hoping to achieve.

This is just a transcript whereby the most important aspects of the interview (in our opinion were writing down in point form (all bold writing is when we spoke).

If you focus on innovation in the part it does not matter on the features of the product. Can we start on you giving us some background, whom your customers are etc.

- We won a competition to California in 2016 to spark our entrepreneurship side and become more creative, whilst there we had a trip to the cinemas and this reminded us of how cool this experience is and how unchanged it has been but that young people are so focused on their mobile phones all the time and so are missing out on this classical cinema experience, if we could somehow combine the cinema experience with the mobile phone then…**ID-J-Exposition**
- We sat in a meeting room, got the idea, and what we liked with this idea is that we could start it immediately. We went straight to an optician and bought some very strong reading glasses and wrapped some material around our head to create a dark room and saw that this was a good idea our MVP
- This was 13January 2016. **ID-B-Making Do**

What was your backgrounds before this.

- We had no background in optics but had studied Industrial economic and Technological management and development.
- We were not familiar with optics or the core makeup of any of that technology, but we were familiar with the value of creating products and taking to market fast. Which was a goal for us initially.
- We didn't have the specific confidence but had the theoretical competence. **ID-B-Recombination**

How did you start the company?

- We started a sole proprietor company and us two were the founders and alone till April.
- 5 Days later we made a prototype in 19th January - we used some leather we found in the attic. **IT-B-Making Do**
- We then started networking by going to local opticians and going to universities to get theoretical background and a mentorship program from the university of entrepreneurship - Vedpak - a guy to make machines to pack wood. **IT-N-Resources**

What we are looking at are events in which you met the person in which you were able to improve your capacity.

- We met him on the 23rd of January
- The leather one was finished on the 18th-19th Feb
- Ola we met on the 22nd
- We first had an unofficial meeting with a PhD candidate which gave us an official meeting with our mentors at SPARK in NTNU.

In the 27th of January we went to Krogh Optikk and established a relationship with them, whom gave us a connection to a PhD in optics who has been the single most important person in building the optical part of our product. Although not officially part of the team.

In the 29th January we started 3D printing segments to make the prototype, we got access to the university printer, We had established the prototyping, technical advisors and business advisors in this period. **IT-N-Knowledge & Resources.**

It was not until you had this first prototype that you moved from this to the company?

The first public presentation was in the beginning of February when we presented our prototypes but we had already made pre sales at that point based on our concept, which gave us 25.000 in funding that gave us the ability to prototype a little more effectively until May. **IT-B-Making Do**

- In May we changed from Moviebox to MovieMask

During this time were you testing your prototypes on the potential customers constantly and whom where they?

- We started with the hypothesis that young people were our main target but we would actually show it to anyone we felt could benefit from it. From casual users to showing it to companies.
- We would show people in organised meetings, who would take it to their family at home.
- There was a lot of people that could use the product. Because of our interactions with people - **IT-J-Job Spec**

This process happened for how long?

We were doing it by ourselves with 3D printers and ordered lenses. This was the case till around May when we got to partner with a company called Inventus and then we started with a bit more advanced production levels. **IT-B-Making Do**

How had you guys come about the resources up until this point.

- We got some funding from innovation Norway
- Some mentorship program which helped us with making concepts - this is how to work it into a manufactural design.

2016 - Zoomed Out

- Jan & Feb was concept testing
- March - May was the heavy prototyping part
- May - October industrialisation of prototypes into something that can be manufactured and ready for market
- October to present was the market launch.
- We made a new product in January.

How did you find this factory in China?

We started with the idea of production in Norway and had meetings with different plastic producers and professors from universities, everyone was very positive but they didn't have the production ability for all components only parts so we instead chose to ask a firm in Trondheim that sources products which helped us by finding out fairly fast that this collaboration would not work out

- The professors gave us leads into Norwegian partners, all we got from this was knowledge as we learnt a lot from asking them, we then contacted a lot of different Norwegian startups who used the same thermoform casing that they used in their products, we got them but this was still a dead end with manufacturers. **IT-N-Knowledge**
- So we sent out 100s of emails on Alibaba to makers of similar products like ski googles and VR glasses and from them we got 25 good answers and slowly whittled down to getting one guy that was the best for manufacturing
- So we tried through our network first but ended up using our own resource capacity to find out a solution **IT-B- Recombination**

From your lack of knowledge of materials and such things you were able to be more creative and resourcefulness whereas someone in optics or the like would want to try and make it perfect before moving on whereas you executed wherever you could.

We would ask people to find out what they wanted, one thing asked a lot was whether they preferred 2D or 3D movies resulting in majority preferring 2D movies but none of the current solutions had a main focus on 3D thinking that this is the future whereas our key finding is that people still enjoyed and would keep enjoying 2D. **IT-J-Situational Analysis**

WE validated our steps with what was going on in the VR industry and what players are dominating the industry, with google cardboard etc. but they had minimal users, and the main reasons was low resolution and minimum content, and we knew we could provide a lot of both. **IT-J-Observation**

In the JTBD framework one of the most important part of discovering a job is Exposition - You went to the movies and saw this is how it is done, Observation - what people are doing, the trends of the market etc. then you looked at the situational analysis which is taking into account the motivations and anxieties of the user in order to consume this product.

How did you pitch this product to an actual customer?

- WE don't sell it as a replacement for the cinema, for older people we mention its ability in using it on the aeroplanes, for other people it is more for using it in bed etc.
- WE adapt our pitch based on some user scenarios and the perks within their demographic
- We stay positive without trash talking the alternatives and rather just focusing on what our product can do rather than what we can do better than others
- A lot of users mention the annoyance of alternative solutions but we have tried to not be negative to the alternatives. **V-B-Adaptability**

If people have alternatives how can we tap into these to make our product better. What we are interested in when you are doing marketing how do you frame the product.

- We tried a lot of different things, lately we have focused more on the user settings,
- We go away from the features, the product itself and put people into the experience focusing on the emotional elements.

WE are currently making a new version for the movie mask for the end of 2017 and also looking at making a portable projector.

- We are trying to these days understand how this organisation needs to look like and what we need to do to make these new products. **IT-J-Situational Analysis**

The final step that we need to map out is the actual validation the first client etc.

How did you enter into this process?

- Tronn helped a lot, connecting us with Telenor etc. we started pre selling in February 2016, we were coming up with the prototype, idea and validating all at the same time.
- Our customers were people who were supporting us as a team not so much the product but they wanted us to succeed. **V-N-Resources**

The selling process was mapped out as follows.
-presales Feb. - may 2016, 50 products
- April we had presales to the value of 200 units that were to be used as company gifts
- we established connection with Telenor tv2 and Altibox. A lot of this came from engagement via Tronn, they both signed up for 500-1000 units with no obligation, TV2 fell off but Telenor wants continued collaboration. **V-N-Resource**

- We also had some prototype experimentation with underwater tech-drone in Trondheim since June and this has continued **V-B-Adaptation**

Our first delivery of a product was first delivered at 2000 a piece for 10 prototypes which was very important for gaining our next sales as people were willing to pay for it as the solution did not exist on the market yet

WE engaged in some collaborations we got the deal with Telenor in October.
WE did kickstarter from Sept-October which succeeded at raising 300.000NOK. Lots of local news on it but nothing international.

- Google daydream, we tried to get some press releases, to show that we existed first, we tried with TechCrunch but didn't get much feed on it. But it focuses on 3D we still focus on 2D so it has the same limitations to not focusing on 2D. **V-J-Situational Analysis**
- Daydream was late October.
- In October we got the deal with Telenor, Altibox and eplehuset.

Daydream was another way of validation as we were into the market before them, but for google to bring in a product meant that it was a big idea.

How have you come about recruiting most of the team?

- Through university.
- Our university is eager into getting experience and learning for entrepreneurship.

We got majority through university.

- Late April we had trine,
- WE had a connection from Eirik who helped with our kickstarter.
    - He ended up staying on as our photographer.
- We utilised internships a lot, which was useful for our limited resources. **Networking**

One of the things about JTBD is that you start looking at opportunities to non-consumption.

We utilised people that were recovering in hospital they would usually just be spending their time waiting for the doctor, or friends or family to visit. **V-J-Observation**

WE sell outside of Norway as well, or try to.

Xeneta

Patrik Berglund
Date Of Interview - 16.03.17
Length of Interview - 50 minutes
Mode of Interview - Face to Face

We introduced the topic of our thesis and what we were hoping to achieve.

This is just a transcript whereby the most important aspects of the interview (in our opinion were writing down in point form (all bold writing is when we spoke).

It is not necessarily linear as we can get traction and then go back to ideation. Some people don't believe in these frameworks etc. and some do. The good things about these frameworks is that they are very abstract, we can pick and choose from this.

How did you come up with the idea, the process, what you were doing prior to starting?

- I used to work for Kuehne+Nagel together with Tomas.**ID-N-Knowledge**
- I started the company 8-9 years ago (check LinkedIn pages)
- *Kuehne+Nagel* was a huge global company – when I started I did basic stuff – I bought capacity – simple middleman exercise. I did it with Thomas – you charge for something and you add a percentage –but with this you have to do big volumes – a lot of transactions – the

market is volatile, prices changes – if the market was high we would charge our customers 15% and get a nice profit, if the market was down we would get a lot less for doing the same work. I felt that I did not provide any more value under the table, whilst earning more. **ID-J-Exposition**

- We wanted to change the business model working for *Kuehne+Nagel* because it was not working the customers wanted the market low and we wanted it high **ID-J-Situational Analysis**
    - In order to do this we needed to branch out as a neutral branch of unsnag. Because in theory we were not the best company in freight. So in order to go to our customers and set up the design for them we needed to be neutral because we can't be selling our own freight, because that is not necessarily the best supplier.**ID-J-Observation**
    - This was a long process for them to accept it but we came up with a new business model which we took to the customers
        - Every customer has a spending criteria (for example 10million) – we will aim to reduce their baseline (of 10million) on a no cure no pay basis.
            - No risk to the customer **IT-J-Situational Analysis**
        - We had a concept of 50/50 – the more we saved the more we earned – Gain Share **IT-B-Making-do**
    - WE couldn't do it on trucks and freights as it does not really have much volatility.
    - You can't compare the new spend with the baseline because the market was down. **IT-J-Observation**
    - We would document to the customer that after working with us this is how they would perform compared with the market – showing them that their performance is better than the market.**IT-J-Situational Analysis**
- The customers loved the concept. This index didn't exist in the industry as of yet. So in order to make money we needed to create this.**IT-B-Making-do**
- The managing director of *Kuehne+Nagel* liked the idea – he invited us to the management meeting – but it didn't go the right way, by the end of the meeting some of the guys stood up and hammered the table saying that we need to be stopped. They didn't want this to happen saying that they stood to lose too much, cannibalising their own profit and killing it. **IT-B-Recombination**
- The managing director still wanted part of it but Patrick and Thomas chose not to – they left the company
- They were still allowed to work within the company and no one paid much attention until they started making some real money.**IT-B-Making-do**
- They started to look into what we are doing: because we were not selling transportation but we were still building the same customers for much bigger amounts.
- They left the company but they were hired back in under their own consulting business. **IT-N-Resources**
- Doing it this way allowed them to have a funded company from day 1 (Nordilog)
- Then they launched Xeneta as – Searaid Index
- Their own intention was to use this index for their consultancy business for the gain share projects.
- Once we released webpage we started getting signups from all over the world – they all reported the same problem not having this ability in the market.**IT-B-Making-do**

- Then we saw this potential (a 200Billion Dollar Niche).
- They then went to all the other freighting companies asking if they could get their database like they had from *Kuehne+Nagel* – they got turned down.**IT-J-Situational Analysis**
- WE saw that the fact was that the only person that actually wanted this to happen was the end customer **IT-J-Job Spec**
- Back in 2012At this stage crowdsourcing was still very new and big data was mostly unheard of. so we in a sense crowdsourced via B2B market – by getting customers etc. through our contacts in the industry to give us their contracts so that we could build data(**Networking) ID-N-Resources**– it was the same data we would get from the freight companies it was just a long way around (**ADAPTING TO THE SITUATION) IT-B-Adaptability**

- It took 2.5 years to get to just a small amount of data that was profitable.
- We raised money first in March 2013. We received 400.000 prices by then, by Jan 2016 we had 2.000.000 prices. Now today we are at 28.000.000.
- WE came together on all the different trade routes of the world. **V-J-Job Spec**

- I got my first entrepreneurial experience from *Kuehne+Nagel* when we were allowed to do our consulting firm model.**ID-N-Knowledge**
- The cool thing the managing director of Kuehne+Nagel did with us was that we immediately sat down started sketching our plans and did some research and he invested 2 full headcounts in us just based on our ideas and some scraps and told us to go figure it out. What this allowed us to do is to completely focus on what the customers wanted. **ID-N-Resources**
- We did everything in excel, PowerPoint and word which allowed us to quickly focus on what the customers wanted.**IT-B-Making-Do**
- WE created a story and went to customer and pitched this business model - before we could even get investment **IT-J-Situational Analysis**
- Even with Xeneta – we went straight to the customers with really immature, weak "prototypes" based on basically useless data – and in our system it all went wrong – but we didn't care, we just wanted to see if we could make something from the data – (**Use resources available – and execute quickly – not the best prototype) IT-B-Making-Do**
- WE told the compelling story to whatever large Norwegian company we could think of – cold calling them and begging for a meeting – showing that we were constantly doing validation – creating something that doesn't exist online **IT-J-Situational Analysis**

- We had Searaid index when we started with Nordilog
- The first version of Xeneta - we did a map but didn't really care how it looked **IT-B-Making-Do or Adaptability**

The latest investment that you landed – this is where you go to the next step – to the next level – when someone believes that you need this money to make the dream ----

- So this is our 3rd round of fundraising now
- We fundraised march 2013 (seed round); Jan 2015;
    - The first was done through a Swedish VC, one of the investors in Spotify – a great brand to have alongside us

- Along with this we also got a Guy called Aldin who is one of the richest people in Norway – he also had ties with shipping (seed extension)**IT-N-Resources**
- Jan 2015 – we did a round with alliance venture. If e
- Jan 2017 was the latest one with Smedley.

- We have also done some smaller things – our chairman invested in order to take on the position.**ID-N-Knowledge**

- I had always intended to build the business brick by brick, but it ended up being a born global blue ocean situation where we had to move quick to take the market **V-B-Adaptability**

- We had the proof points that we had traction –

- WE went for a long time with a free product as the only thing that mattered was that we were validated based on the chart. **IT-J-Job Spec**

What we going through now as you show details in the middle. Regarding resources of your skills, talent. How did you discover your team – co-workers – at the moment you were bootstrapping from the beginning, you knew excel. You knew that you needed to go forward

- We founded the company in Feb 2012, but before that we worked on Searaid index.
- We had huge data but new we had to find a developer to handle the growing amount of data.
- We **Networked** through my wife's, sons cousin who connected us with Wilhelm the best developer they knew (he is also one of the founders)
  - He resigned from his job straight away and joined us **IT-N-Resources**
- He build on it from late 2011 – till march 2013 before we fundraised,
- It was very difficult as the consultancy company was easy and good money.
- We had to prioritise Xeneta and stop milking our consultancy company but I didn't really do this till we met the rest of the team and they really showed us what the potential was.**IT-B-Making-do**

Regarding skills you needed to build yourself

- Now we are 40 people and new people coming in all the time
- What we did when were just 3 people was exactly the same but we just had so little time and so could only do so little of what is possible now **IT-B-Making-do**
  - We had all hats on
- WE sucked at marketing but good at sales.
- Wilhelm was a great developer.
- This is all we needed in the beginning.

The idea of JTBD is that when you discover this job – innovation is sometimes a process of when you discover the opportunity.

- You engage really thoroughly and deeply with your customers and then you get to see a need – there is nothing revolutionary about it, what is required is really hard work, you need to work your butts off and put it all in. **IT-B-Adaptability**

Before getting to the job there are 3 elements – exposition (observing the problem by yourself) Observation – looking at things that are work arounds or problems within the industry then you have Analysis of the situation – you look at people's behaviours, anxieties when they are going to do a certain process. In the outcome they use of what to have.

- The only other side is that people will tell you all kinds of things, Xeneta would have gone in all kinds of directions if we had listened to everyone - everyone has an opinion and knows what you should be doing. **IT-J-Situational analysis**

You don't pay attention to the conditions or characteristics of the person as it varies so much, you don't think of the features that you need to have as it changes all the time. It really fits to the kind of companies that moves to this process.

What we are currently looking for in the sense of validation and when you are currently getting to customers what are the pain points that you sell to the customer – emotional, social, functional.

In the part of the networking for the JTBD – now we are actually in the validation/ the sales – how did you guys find out that this is the best pitch that we can make to customers

- This is constantly evolving – a lot of what Thomas and I were doing in the beginning we are still doing today – we just have a lot more data. We have to do so little of what we needed to do back then

- It was a huge obstacle to move from short term to long term – there were so many flops in the short term, as it is so volatile etc. but to move from that to long term was really hard. **V-B-Adaptability**
- The main pitching point has always been – where do you sit in regards to the rest of the market. If you sit here but we can save you xx then …. **V-J-Job Spec**

- Since the market is volatile, it never stops. I always focus on the right price rather than reaching minimum . find a competitive price in the market not the lowest. **V-J-Job Spec**

Did you actually use "launching a threat"

- I take a much softer approach – these a procurement service men and women that know their volatility and what not.
- My argument is without visibility into this and tracking it is impossible.
- Their customers have all been I have been looking for this for so long or I did not even know that this existed. **V-J-Situational Analysis**

This is the other part of innovation which is that sometimes people don't even realise that they are suffering this pain or this job and they don't even realise till you present it to them.
Finding out that is the innovation part.

- I agree to that. But if you think of the journey we have had with our careers – someone should have figured it out much before we did.

- I was supposed to study Russian – I wanted to apply for UiO but typed in the wrong codes and ended up in North Norway, so I evaluated my options and saw that BI could hem take me. I liked the lecture on logistics and so went for a job in logistics (Kunenago)**ID-N-Knowledge**

- You engage really thoroughly and deeply with your customers and then you get to see a need – there is nothing revolutionary about it, what is required is really hard work, you need to work your butts off and put it all in. **IT-B-Adaptability**

- I We have been very risk adverse from my point of view, we have been very structured, for instance keeping Nordilog as a backup and having money in that bank account, even though we didn't work in that company for years, just as a fall-back plan, will to take up risks is not the point it is about mitigating risks, be smart enough to check up on things without just saying, that sounds good let's put money into that **IT-J-Situational Analysis**

The situation of Norway was resource constrained you found difficulties to get people etc.

- When we were raising money there were very few VC's in Norway and that is why we went to Sweden.**ID-N-Resource**

TikkTalk

Gautam Chandna & Rodney Boot
Date Of Interview - 24.03.17
Length of Interview - 50 minutes
Mode of Interview - Face to Face

We introduced the topic of our thesis and what we were hoping to achieve.

This is just a transcript whereby the most important aspects of the interview (in our opinion were writing down in point form (all bold writing is when we spoke).

Tell us a little bit about TikkTalk, how you came up with the idea, the team, how you actually met.

- The idea actually came from 2 sources – one was from Rolf Assev whom is one of the founders of startup lab talked to Gautam. The other co-founder had a similar idea and he met Gautam
    - Rolf had an opportunity to look into this industry – the idea came to him because his wife was a doctor and she had the problem of booking and hiring interpreters – so he knew that this could solve the problem, he knew some investors that wanted to take on the challenge. **ID-N-Knowledge**
    - Rolf tried to convince Gautam to take the role of starting the company but he did not accept as he did not see the market or the need and didn't see himself as running a

company, he did make a prototype for him, told him this was easy to do, 'I can do it but I don't want to'. but then the refugee crisis hit. Making the problems of the industry much more open and accessible as the existing systems could not scale – the refugee crisis proved that it was not doable (with current solutions). **ID-J-Exposition**

- Making the problems of the industry much more open and accessible as the existing system could not scale – the refuge crisis proved that it was not doable **ID-J-Observation**
- Then Rolf came back to me (Gautam) with another investor but I said he could only start the idea, make the software, he couldn't do marketing and definitely not sales in Norway. **ID-N-Knowledge**
    - Especially selling to government in Norway
- He knew Rodney prior to this, they were friends for many years, they both had their other ideas for startups. But then with the refugee crisis hitting I spoke with Rodney and said let's do something meaningful. SO we took this challenge, at the same time the third partner (Jørn Mikellson) had been providing content to medical personnel around Norway as he was involved in making videos etc. not necessarily for interpreters (Adaptability) although this was one of his goals.

So we met all 3 of us and in a very detailed discussion of what and how we were going to do this before anybody actually quit their jobs.**ID-N-Resources**

- We made a contract and signed it saying that if we quit our jobs this is what going to happen.
- We quit on 31st December 2015. On the 12th January 2016 we registered the name and the company. On the 28th it was registers and on the 1st of February we started our work – so it was all extremely structured **ID-B-Adaptability**
- There were legal contracts, IP, everything was sorted out.
- On the 1st our statement has always been, launch first ask questions later SO on the very first day I asked Rodney - I need the logo - before vision, mission statement etc. And he made me a logo and a design. **IT-B-Making Do**
- 5th February we were live and online, we exist – coming soon we are ready. This was not a prototype, just a message to the world saying that we exist.
- 10th -11th we started actual engineering work -
- we did not have enough money (**Resource Constrained)** to hire in Norway so we outsourced, but first we picked the Stack – researched what is the best Stack I should use depending on my situation
- Knowing what we did about the company we picked a very structured language and one that is not anyone's first language which meant we eliminated any chance of having a junior developer. **IT-N-Resources**
- This choice made things harder for us but knew it would work out long term we are still using the same code base now. (visionary)
- We tested out the interviewees by originally dividing into smaller pieces testing different people (around 100). As it is hard to judge a developer off of a resume we need to see actual work. now we work with 7 – so we were very much picking and choosing, which was important as in order to build something fast it was needed to have good communication. **IT-N-Resources**

This is not to say that any of them were bad developers, they were all good developers. A lot of talented people.

- I started looking for companies or websites recently launched using the same stack and whom made them. They I saw if I could get some recommendations

or reviews and contacted them to see if they would come in for some work. I wanted to know all about their process etc.

- Feb 2015 we actually found the front end developer that still works with us, the backend team became later that month and the first part was just about prototyping showing people what they would see - Launch First. **IT-B-Making Do.**

- We always stuck on launching first.

Were you often launching these prototypes to get them out there despite feeling they maybe were not the best possible product?

- Totally, but at the time we felt it was the best we could do despite knowing we would develop on it. But we obviously learnt, that one of the things we actually did was offer both interpreters to both interpret and receive interpretations, this was not necessarily wrong as we originally decided that anyone coming to our website could essentially do both, but after learning more about the interpretation environment in Norway we saw that it was heavily controlled in terms of qualifications necessary and also that interpreters in Norway just don't hire other interpreters. So we learned we had to be more professional and qualifications based. **IT-J-Situational Analysis**

Going back to ideation – that idea came from Rolf but what was the exposition or the problem.

- The problem was observed very easily as the government did a lot of research showing that 9 out of 10 times hospitals were having to use unqualified interpreters – siblings, children or family or often times the interpreters wouldn't even show up for their sessions or send someone else, there was no ID verification .
- There were payment issues where interpreters were not making much money - agencies taking much in commission.
  There was not much quality control in the system at all - we were looking at it from the buyers side - hospitals etc.
- There are too few interpreters, and not streamlined enough.
- Back then our understanding of the word interpreter is quite relaxed, anyone can say they are interpreters – so we needed to separate the term interpreter and make it not so easy for anyone to be one.

So this came from this government report as well as the personal experience of Rolfs wife as well as Jørn and his input from all the experience he had had with hospitals throughout to his career **ID-J-Exposition**

How did you know Rolf prior to this?

- Rolf had hired my brother my sister and then me for Opera software.
- And me and Rodney met each other at different opera parties so we met socially maybe 6 years before we even came up with the idea.
- We actually came together on another idea which didn't quite pan out. **Networking**

You were open to any industry or market?

- Yeah I believe that this current idea came out because we saw we could actually do something because for all ideas we were not willing to leave our comfy jobs, but with this one we really saw the problem and how we could fix it. and the backing from startup lab we were ready to take the risk. **ID-J- Exposition**

How else did StartupLab help you?

- Office space, access to their network, funding. Access to all the talent they had. All the deals they provide, for example Amazon is a 15000 NOK discount.
- Stripe has a deal for startup lab. **ID-N-Resources**

With the starting of the prototyping phase were you testing them on customers?

- No not straight away. The goal was to show them a MVP-
- By the end of march we were ready with an MVP and started showing it to people in April which is when we realised that interpreters did not want to be on both sides of the fence. They only wanted to be interpreters. Explaining the original way it was too complicated so we changed the process and decided that you choose between one of two accounts - to use or to be and interpreter. **IT-B-Adaptability**
- By mid-April we launched an invitation only product and started our WordPress website.
- In march we had to interview interpreters first as it was a double sided marketplace and so needed supply before demand
- By talking to interpreters we learnt quite a lot and we could watch them use the system to see how we should change it.
- They were able to tell us from their experience as an interpreter what was important and key insights into how our design should be. **IT-J. Situational Analysis**

Then we put together a plan for what to change. As this gave us a lot more insight into what customers wanted.

April till June we did the changes and on the 12th of June we launched a public product, hired some more people and searched for new funding. **IT-B-Recombination**

- Then summer hit which made things slow but we were able to actively look at few investments, talk to a few investors.
- End of July we closed 7million. **IT-Resources**
- We also had our community manager to start setting up video testing for our interpreters.
- We found that we were too technical a product for the interpreters.
- So we changed our persona and other things. **IT-B-Adaptability.**

We had money prior to this but knew we would need more investment hence going for the 7million.

So with your discovery and the validation of your idea, how did you know that people wanted your platform?

For us the money came because we could prove that all the interpreters wanted our platform so from all the interviews, the end result was they gave positive criticism and feedback

- Some did not but the majority did want something like this which was very useful.

- Previously from this we had also got round 1 and 2 from innovation Norway. We were also negotiating another application which we knew we were going to get and it got signed in September. **V-J-Job Spec.**

This is why the 7Mill came.

In the networking how did you get access to the investors and the interpreters?

- Some found us online and we found the others.
- There is also a directory but we did not use this so much

Do you consider really clear proof these signup?

- By august September we had 100 interpreters .now we have 600
- From the buyers side we still had 60-70 companies but they were not sure yet. This first really started when we got the sales team on board.

- After July we wanted to prove the problem a little more .

- The person who paid was the big boss of companies so we needed a platform that made it easy for them.

- In October we got our first assignment. We were in the news a couple of times. The people we ended up hiring were the ones that found us. We saw that they had passion for this. It was very useful to have them come to us and tell us why this would actually work.

    - We looked for sales people all the time - we interviewed 60plus people - Jens the sales guy found us at Join a Startup and came straight to us afterwards and wanted to join us. **V-N-Resources**

There is an important part in execution and validation in that you bootstrapped the hiring process through the NAV service..

- NAV found us – Mohammed a Syrian refugee came to us as an interpreter but had no qualifications but we had a video test with him and he seemed technical and interesting so we hired him for product testing etc. and then that discussion started.
    - He really had the passion and wanted to make it happen for himself. He always had that drive to get him to some place.
    - Just him from NAV. **Resource**

There is one key part regarding changing from Skivo to TikkTalk – in September. This was a big move because we were changing our name as they originally thought we were a ski company. We were needed to change our name so people could relate more to us - We had to change it all with this - we need to appear different - be more international **V-B-Adaptability, Recombination**

When you guys are approaching to acquire both businesses and users.

- Jens, Lars and Jørn just cold call, but it depends on who we are calling police, hospital etc. as it is a little difficult on the first few calls as we don't really know who we are dealing with. We focused on a combination of the functionality and emotions etc. **V-B-Adaptability**
- It was very much a statement of fact trying to explain how we do things but by explaining on what we believe in. It was still a factual statement on what we were doing as we knew that this would evolve.
- We were never negative about the market, there is no need to spread negativity in the market we just say this is what we are doing, this is how it helps and how it works.
- WE are doing it now, not looking at competitors too much. There is not time for that we are launching a company here. **V-J-Situational Analysis**

What are your major obstacles in going global?

- Regulations and figuring out governmental situations. Most people don't know what it is an interpreter is supposed to do.
- We are providing a marketplace for you to find an interpreter and an interpreter to find you. But this Is a freelance website. So we take some non-liable responsibility in that we know the rules of the country that we operate in. for Norway we have the qualification levels and check them manually. But for Sweden Denmark etc. we don't know what these certifications are and will have to check as otherwise the trust is broken.

- But we did not get into this social responsibility to make that sort of money.

Was there any time throughout this period when you thought you didn't have the resources to move forward.

- The message from the beginning has always been fix or tell me and I will fix it. So it was always fixed. The core is always everything can and will be fixed if you can't then ask for help and we will get it fixed.
- From day one everyone has known their steer and how past that steer they must go. **Making Do.**

We have a technique that we call the level of caring:

- I wholeheartedly disagree but I care very little about this entire concept so my opinion is very irrelevant.

How is your involvement of everyone in the company:

- We both work overtime
- We are always cutting corners as we don't have a specialist for everything so we do a lot of everything still.
  You use your skills and if you need to do something that requires other skills you execute on it anyway as it is a time issue, we don't have time. So if you consider it, should we wait two weeks or should we launch now and find out what the customers think – launch now ask questions later. **V-B-Making Do**

Filmgrail

Simon Souyris Strumse
Date Of Interview - 24.03.17
Length of Interview - 35 minutes
Mode of Interview - Face to Face

We began this interview talking about different design and entrepreneur frameworks.

We introduced the topic of our thesis and what we were hoping to achieve.

This is just a transcript whereby the most important aspects of the interview (in our opinion were writing down in point form (all bold writing is when we spoke).

To be innovative you require the discovery or creation of opportunities - through 3 stages Ideation prototyping and validation

Can you tell us about your journey from when you had the first idea, why you came up with it, were there other team members from the beginning….

- I had no idea of entrepreneurship or anything, we had no framework or methodology to work off of so I kind of learnt along the way, I learnt what to do and definitely what not to do. **ID-B-Adaptability**
- What I know is what I learnt what worked and what didn't work
- I came up with the idea in 2012 and basically it was a user need I felt myself.
    - Netflix etc., had just come **ID-J-Exposition**
- I spoke with a friend whom was the only entrepreneur I knew at the time and he told me all about what I should do and pushed me towards innovation Norway to get a grant and get started (Networking. Strong ties to weak ties) **ID-N-Knowledge**
- I got a couple of co-founders (people I knew at the time) we got the grant and developed the idea. It wasn't the same idea as to what Filmgrail is now (pivoting) **ID-B-Making-do**
    - It was the same problem we wanted to solve but the idea was not the same **ID-B-Adaptability**
- I found a programmer online to help me develop the first prototype in 2012.
- I spent the first year prototyping in my head and making excel spreadsheets with very easy ideas around it and testing the idea on people.
- Then with the programmer we spent 4 months to get the first prototype up and running - very simple - having that I was able to demonstrate the idea that it was something that could work.
    - MVP **ID-B-Making-do**

- My first angel investors whom I met through networking - talk to 10000 and meet 1 - by taking every opportunity
- By having the product people saw that I was serious and I was invited to different networking events.

- Went to a lot of business networking events and then I met a friend there who introduced me to a private friend whom was my first angel investor (strong to weak ties). **IT-N-Resources**
- I met my cofounder Rashid (CTO) who started by making a better prototype free of charge because he liked the project (passion driven) then after I raised some money he jumped into the project.
    - This was in 2013-2014 at Shift
    - Two very slow years in the beginning finding my footing, talking to people to find what I wanted to do. **IT-N-Knowledge**

First prototype that gave you low quality with moods this was early 2013. **ID-B-Making-do**

You had no background, were you learning by doing or getting advice?

- I got a lot of advice from a lot of people and what I learnt from this is don't take advice. Everyone has opinions but they aren't necessary right.
    - There is a lot of people who may know more than you in some areas they don't know more about what you actually want to do **IT-J-Observation**
    - The only valuable lessons I have learnt is by learning by doing - **IT-B-Making-do**

    - I went to lots of meetings before I could close one, now I can close one on the phone. Practice makes Perfect
- The angel investor entered the company in 2014 - first half
- I still go to a lot of networking conferences **IT-N-Resources**

Were you 100% into the idea from the start?

- I quit my job and jumped in 2-3 months after coming up with the idea, I applied for the grant and then got into it. I also got a very cheap loan by being creative. **ID-B-Adaptability**

- We launched our first prototype on the web and then a mobile app based on the initial concept which got 40.000 downloads overnight, got lots of press and won app of the year and lots of good reviews and everything's, but had zero retention **IT-B-Making-do**

How did you approach the customers?

- Well I made this thing for myself, so based on an idea, instead of taking a hypothesis testing it on some people we just built the whole thing and launched it which turned out to be good, as I am not sure we would have done anything different if we had taken a different approach. **IT-B-Making Do**
- We have large companies that we work with and come to us and we can help them based on experiences we have had. They are locked into these lean processes which

costs them much money whereas we just go for it and execute with the similar result. **IT-B-Making-do**

You got exposition to the problem, by yourself by being in the problem group

- When we launched the product was wrong, people liked the idea the concept but it just didn't work they didn't use it. The main features were wrong. We wanted to build something that made it easier, but instead we built the same that was there just more fancy and fun to use once but not a utility. **IT-J-Situational Analysis**

How did you solve this problem

So when this didn't work I got a new guy into the team as a cofounder, whom invested a little and committed to working with us for a while - had a background in startups etc. **IT-B-Recombination**

- Lots of experience, really good products guy. Best I know
- He stayed with us for 2 years, still in our board now. And contributing and the same level

When you were solving the problem, you did not observe users but did you benchmark yourself against other options?

- We were very bad at taking that approach, we still are, we spent time asking people, but with no system.**IT-J-Exposition**
- We spend almost 5 years getting where we are now, a slow process but a good thing is that it has been kind of hard to fund this product in Norway, as it is a consumer product.
- This forced us to have a very low burning rate, meaning we developed a lot of technology, seeing lots of other startups doing similar things, getting lots in investments and just burnt all the money on this idea, on the same business model we have, but they failed. **IT-B-Making-do**
- We took a slower speed, not getting any revenue or funding but continuously progressing, but we could see what they spent all their money on and learnt from this and just did what worked.**IT-J-Observation**
- What we did in the methodology seemed to work.
- We launched similar products to them two times, one with a login one without. **IT-B-Making-do**
-

Now that you are ready with the product in the market.

We launched the last version in Spring 2016, we saw that we had a product with retention, at the same time we saw that people are not going to discover a product automatically, so we need a lot of marketing resources, we also learnt on the way that what we were doing then meant a huge tech investment in streaming, and their own tech. And the profit margins on

streaming are very small. Streaming aggregations was a failed business model, and as we had not spent much money on this we did not have to defend the position, **V-B-Adaptability**

- So this summer we did a pivot and made a deal with a cinema company,
- DVD market crashed, streaming is not replacing the revenue whereas cinema has the same amount of people but the prices go up so the revenue is going up.
- It is still a larger and growing market.
- There is profit margins here and so we launched a cinema app which is what validated it for us - that a customer could come to ask and say we need a great product and we could just push out this great product. **V-J-Situational Analysis**

- Some of the cinema owners started coming to us. So were interested in teaming with us. Saying that they had spent 3 years with 30 people trying to do what we can do in a couple of months, they wanted our help - they couldn't believe we could do it but if we could...
- We have therefore opened up vertically. And the cinema can now be a stand-alone business. **V-N-Knowledge**
-
- We validated that we can deliver and we pivoted to a B2B model.
- Powered by Filmgrail solution
- Our product could do more than what was available at a margin of the cost.
- WE placed ourselves in between the white goods company and the in-house team.
- **V-J-Job Spec**

We are now B3C as we are a mix of B2B B2C and C2C.

- We are a consumer product but we sell our product to Businesses.
- SaaS

How do you approach your current customers, how do you get to their needs.

When you go to a b2b you tend to go functional.

- I am kind of expanding our markets, learning it now, don't really have a strategy. We are seeing that basically all the different companies I am working with today I have been talking with them for years, and first they have been laughing at me, then blowing me off, listening not paying attention as time has passed and slowly their mentality has changed for the better. They used to try and do it by themselves and it didn't work
- So now they come to us. And we say we can deliver what you need for a small % of what you spent over the last 4 years trying to do it yourself. We deliver to cinema they go to conferences show their partners and other companies and they want it and so put them in touch with us. we are now networking this way and focused on working with these customers **V-N-Resource**
- Now we are very focused on just working with the existing companies.

- The companies that are going to survive are those that can deliver services. **V-J-Job Spec**

Kahoot!

Johan Brand
Date Of Interview - 24.03.17
Length of Interview - 50 minutes
Mode of Interview - Face to Face

We began this interview talking about different design and entrepreneur frameworks.

We introduced the topic of our thesis and what we were hoping to achieve.

This is just a transcript whereby the most important aspects of the interview (in our opinion were writing down in point form (all bold writing is when we spoke).

It is not necessarily linear as we can get traction and then go back to ideation. Some people don't believe in these frameworks etc. and some do. The good things about these frameworks is that they are very abstract, we can pick and choose from this.

- My Background, I worked with frameworks. I was there when the business model canvas and the lean startup were being presented for the first time **ID-N-Knowledge**
- Which is great to be a part of these frameworks and see the journey that they have been on and how the frameworks change as the journey goes, the frameworks are purely references, but some people see them as bibles and shoehorn their things into and think that it will come up like magic.**(Discussion to Expand possibility to include other theories)**
- *We use these reference tools as communication tools between the teams as a framework to create a common language between the teams.* **ID/IT-B-Recombination**
- They are not blueprints for how to make a business but are very useful tools.
- The norms to create a culture.

Tell us a little about how you came about the idea etc.

- It isn't simple, that is some of the reasons why it works
- It is more that 3 different streams of ideas that independently we have been doing but the magic happened when we met **(ID-N-Knowledge)**
- In 2008/9 I was on stage holding a presentation in Norway about play, which I had been studying professionally through my work ()**(ID-N-Knowledge)**
- The way to apply play as a methodology for creativity **(ID-J-Exposition)**
- I was creating a framework called playology - to apply it to behavioural design, marketing etc.**(ID-B-Recombination)**

- Basically anything that you were doing with other humans, as play is the first language you have.
- I did this with some large companies like BBC and Mercedes Benz **(ID-B-Making-do)**
- This company was called playgroup, we were based in London.
    - Doing everything from repositioning brands to comes
- I started this in 2006 and the guy from Trondheim was also doing similar things in 2006, but we were basically parallel in utilising technology and people in the same space. And his professor had also been doing the same thing.

- So we met up and started exploring each other's ideas, separately and together this was all about seeing the potential of other people's ideas. Presenting, stripping it apart **(ID-B-Recombination)**
- I actually realised through playgroup that I couldn't do what I wanted to so I left them and took a job with another company for 6 months to help them develop a product **(ID-B-Adaptability)** to allow children who lived away from the grandparents to have communication with them - particularly when they don't speak the same language - through play. **(ID-J-Observation)**
- I used all the different canvases to help this agency create an internal language (**Not part of Kahoot)**.
    - Did venture scoping for them but had to leave as it was not my path
- For what became Kahoot we applied our principles and what we had of ideas into different products, we did that into the ideation phase and then I started we are human **ID-B-Recombination**

- With the professor and my cofounder of Kahoot (Morten the CTO) was continuing with Kahoot ideation and we start with We are Human.**ID-N-Knowledge**
    - My cofounder at WAH was a co-worker from Playgroup - He was my employee, but when I met him I knew, in 2006 - that this guy I wanted to started a business with as he was younger but super talented and complementary and you could see the potential in the person and see what can he do to add value. So us two in London started WAH. We identified education and health as the two sectors.
    - To take our ideas our technology and other people's ideas to build 2 products in education and health **(ID-B-Recombination)**
    - Along with the professor and Morten whom I met in 2009 at the talk on play we wanted to find what we were really trying to do here. **(ID-J-Exposition)**
    - They were prototyping in London and we were prototyping here in Norway so we were both developing the ideation process but from our 2 separate companies to put into practice design thinking, service design and the business model canvas and we were trying to bend it and use it in new and understandable ways, for example I used it on politicians and city to city

interpretation. We wanted to solve the problem of getting people to collaborate.**ID-B-Recombination**

- We learnt that learning and education were stuck in their ways and it needed to be fixed.
- You have to change it at school which was our realisation and then we got very analytical about it, **ID-J-Observation**

- The professor was applying play to the classroom through quizzing in the lecture hall, Morten was looking at play in the cinemas to get people who wouldn't usually collaborate to collaborate, and me and my design partner were more looking at problem solving and design through methodology **ID-J-Exposition**
- In WAH we started becoming consultants on Gamestorming, we did big projects with large corporates and small startups around the world.**ID-B-Adaptability**
- Fuzzy goals. Which is very similar to education. Preparing yourself for the unknown which is so different to business processes which are so predictable **ID-J-Situational Analysis**

The dates for We are Human - it was established in 2010.

Iteration starts here
How did you ensure that you kept people away from talking about Gamification, that it was game based?

- Game storming and fuzzy goals was a very important part of analysing the market.**IT-J-Situational Analysis**
- We looked at different avenues of which we could apply play but at the end of the day we kept coming back to education.**IT-J-Situational Analysis**
- WE wanted to make people creative. **IT-J-Exposition**
- WE gathered resources from big companies like HP etc. **ID-N-Resource**

We made sure that what we were doing was game based - behavioural, not gamification. WE were inherently making games.**IT-B-Making-do**

You need to separate how it is this from that

- If you look at Kahoot we are not gamification. We are game based learning. **IT-J-Observation**
- Part of the design process.
- Gamestorming was used to do the iteration process.**IT-B-Making-do**
- The university was doing Gamification NTNU,**IT-N-Resources**
- but Kahoot itself is Game based learning, and Gamification is just part of Game Based Learning **IT-J-Situational Analysis**

When you are game based, people accept the rules, the same as workshops, you step into the room, you say to people what the rules are and they accept it. stop thinking about other things

and get the game space, then they bend the rules and this is the creativity part when you explore what they are doing **IT-J-Job Spec**. This is what we have in us, when people are truly innovative they have a common language and they use this to gain structure.

- For a team to be truly innovative they need to have a common language, use the structure of the team. Of Games they have learnt when they are kids and applying itself.**IT-B-Recombination**
- Designers often intuitively like to have a childlike view, you draw a problem area and define what to look at and that is what we were drawn towards with Kahoot and then threw at it what we had learnt from gamification technology and research along the way **IT-B-Recombination**
- And got closer and closer and closer until we realised ok - the classroom **IT-J-Situational Analysis**
- To find the JTBD was to address the classroom and make it awesome as you define the problem area **IT-J-Job Spec**
- - students don't learn they don't want to go to school etc. they get stressed, they hate it, teachers get stressed, they hate it.
- **IT-J-Situational Analysis**
- They need to learn creativity, problem solving. **IT-J-Job Spec**
- WE realise we have to do early stage education. **IT-J-Situational Analysis**

Did you get into discussions about engagement

- Honestly not so easy to say, but most of the research in this area is lacking. It doesn't really give you what you want, because it is behavioural study. The teachers will say that they use Kahoot because of their students punching the air. **IT-J-Job Spec**
- There is no meta way of measuring.
- WE couldn't rely on research the only thing we could rely on was getting to adoption for validation. **V-J-Observation**
- We had all the ground rules we just need to put the game feature in. for instance people prefer multiple choice, what is a quiz but the game version of multiple choice **IT-J-Situational analysis**.

- We would take the available structures and build the game elements into it **IT-B-Making-do**

What we saw was that it was also important to give the users the ability to create the challenges, hence create your own games etc.**IT-J-Job Spec**

- Engagement couldn't be measured - I use Kahoot because the kids smile and shout in elation.**IT-J-Job Spec**

VALIDATION

- Our breakthrough in 2012 was when we came up with the creator - when you as a player could create and launch your own education game. WE moved away from being another prototype to being a complete prototype **IT-B-Adaptability**

When you were testing this was this just in Norway or all over and why did you go away from Norway if so?

- We were testing this in the UK and US, because we lived in UK and Norway but we identified the US as the most important market to go for as they are playful and a bad school system but had a willingness to change and if you win in the US you win. **V-J-Job Spec**
- It was designed for the US Market-**V-J-Job Spec**

The quiz was the start, the creator was the real ground breaker. **IT-B-Adaptability**

- The research for the quiz started in 2006, the creator challenge was validation. **V-J-Job Spec**
- Multiple choice was a market opportunity, it was like going after retail.
- The prototyping for the quiz was back in 2006 and prototyping in the company and the rebuild of all the previous prototypes in 2012. **V-B-Adaptability**
- In 2012 we rebuild in HTML, went from previous technologies, we realised we needed to go global so had to go to HTML, this made it more rapid to scale.
- Quiz is often an easy gamification tool- you have MC - quiz is the game option of that. **V-J-Job Spec**

You got validation of each iteration but the strong key that this is it, this is the Validation

- We launched the product - had the strong feeling throughout the whole process as we were validating rapidly - in 2013 we could really see the effect of the product and knew that this worked then it was just about getting it optimised, but we had the validation that this works with the students. EPIC WINS - fist pumping. **V-J-Job Spec**
- We were going after behaviour and that is the validation that we needed. We just did classic lean marketing, by releasing the product and word of mouth.
- **V-J-Job Spec**

One of the things you were lacking was resources such as funding. How did you guys look at this as validation is also about, how did external people start believing in it through investment.

- The whole parallel of this, the technology was developed by the CTO but through the collaboration of the university and us, **V-B-Making-do**
- We then won competitions and got grants from research council etc., constantly showing us validation as people believed in what we were doing **IT-N-Resources**.
- WE designed the pedagogy into the business in 2012. The funding is constantly funding of people believe in us in the market, in the beginning and why we could get

a lot of money up front was because we could address a problem that everyone could relate to. We could constantly tell a story that people could believe in.**IT-J-Job Spec**

One of the things of JTBD is in the validation of the marketing - you get closer to creating an experience:

-

We were extremely focused on the value proposition and we broke down, who is the teacher what they need what the students need and we were very clear on these different value propositions and the school itself needed to concede on the technology as they did not like mobile phones in the school. **V-J-Job Spec**

Breaking down what we were doing, very clear on every stakeholder. We were giving them something, addressing a point, all the way up to the foreign minister. **V-N-Resources**

- Some of the business problems we had as a society was a collaboration across borders - the global classroom.

V-N-Resources

WE only went for funding in Norway then the network opened up because of what we were doing **V-N-Resources**

We trying to identify the behaviour of the user, the observation of the outcome, and the situational analysis

Our biggest completion was not doing it
V-J-Observation
- so competitors we actually treated them as an asset as we were breaking the same ground, if they could break into a room we could go into the same room and vice versa. **V-J-Observation**
We have very good dialogue with most of our competitors as the space is so big and we need collaboration to kind of break the market. For introducing these foreign elements **V-J-Observation**
We did something different by addressing the behavioural problem whilst the others looked at the technical problems. We addressed the end users behavioural problem. **V-J-Situational Analysis**

- One of our competitors thought the user was the professor or the teacher. But we knew you had to win the classroom. Your real identification of user is the student in the classroom. The teacher is purely a gatekeeper. And once you define this role it becomes easier to design for your user.
-
- **V-J-Situational Analysis**

CC identifies, non consumption as a bigger competitor than those actually competing

- You never design for one user you design for each kind of character in their product. **V-J-Situational Analysis**

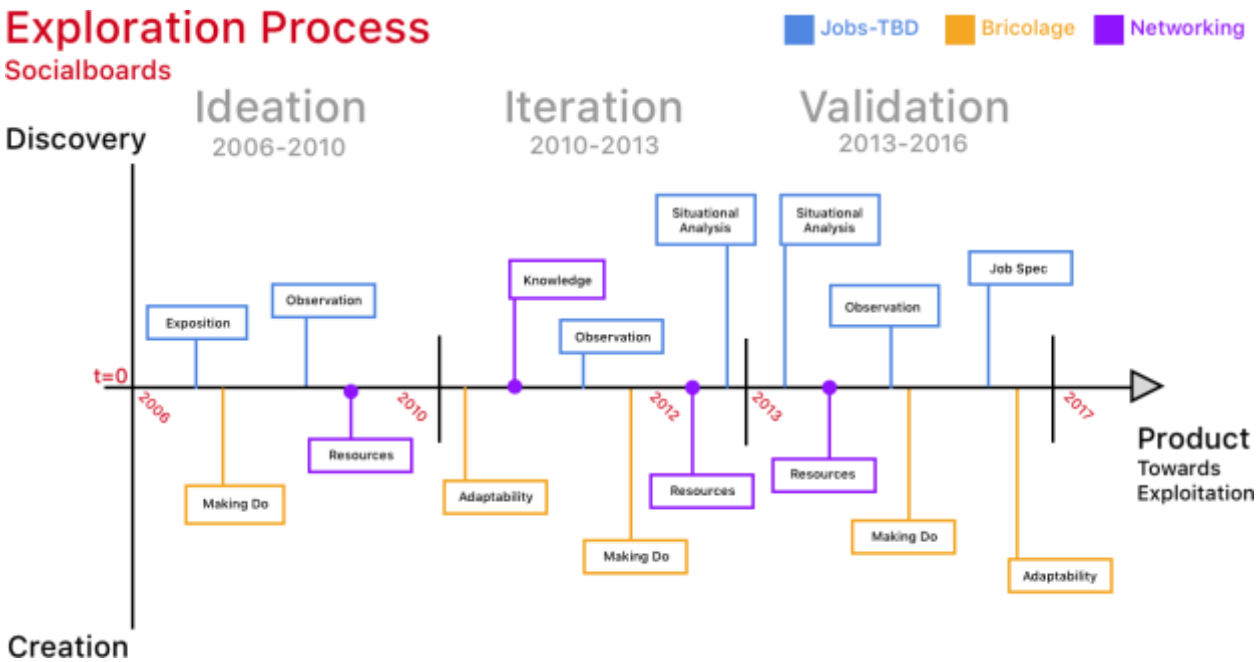
- Non consumption - it is the biggest opportunity. They know that what we are doing is one of the core problems, they have seen that we have done something that we have never been able to do. **V-J-Observation**
  Google is one of our big competitors and Microsoft so we have market validation as they now invest in us. **V-N-Resources**
-

- We are free to use because it is about penetration make the money is a big problem but is a secondary problem to not being used at all. It is insanely difficult to get people to do something new. **V-J-Situational Analysis**

- With prototyping, the way we look at it is that Kahoot is one big prototype with different small cycles, which is hard to explain to investors that the company is set up like this, and we want to keep the business like this so that our product does not get locked in so that we can still have the ability to realise that maybe this is not the big problem it is just the first step, **V-B-Adaptability**
- We don't want to lock in or put restrictions in.
- Learning starts by asking great questions.

Appendix 7 timelines for identifying the formation of opportunities in our cases

Social Boards



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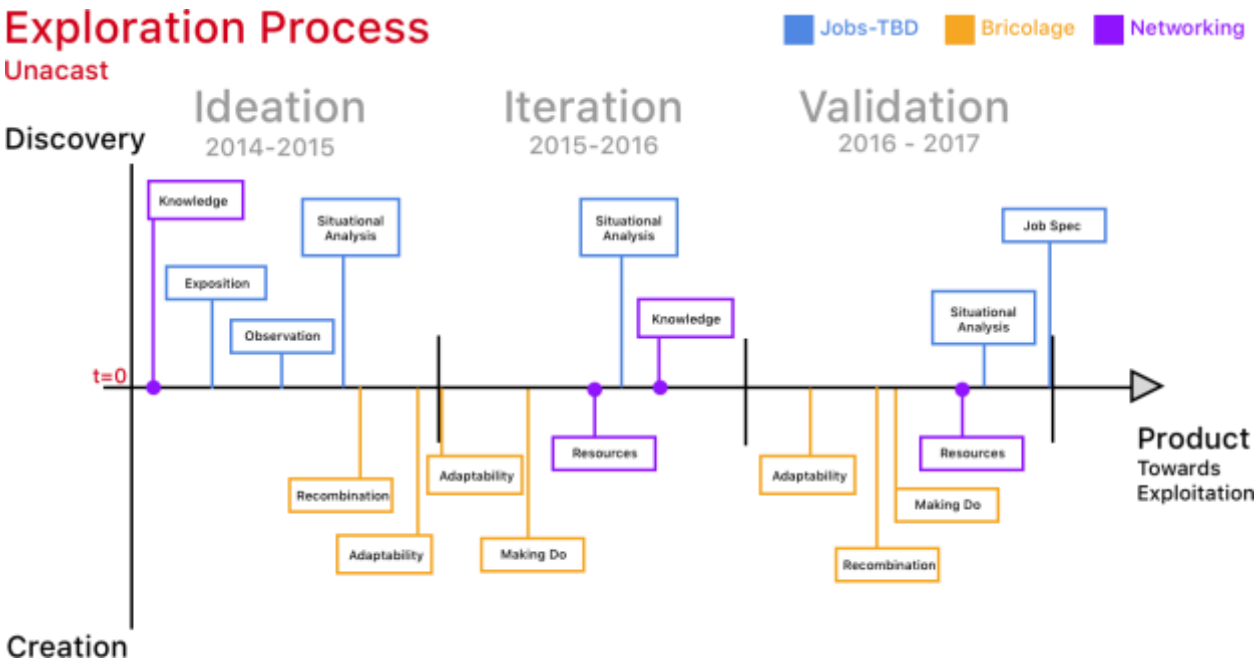

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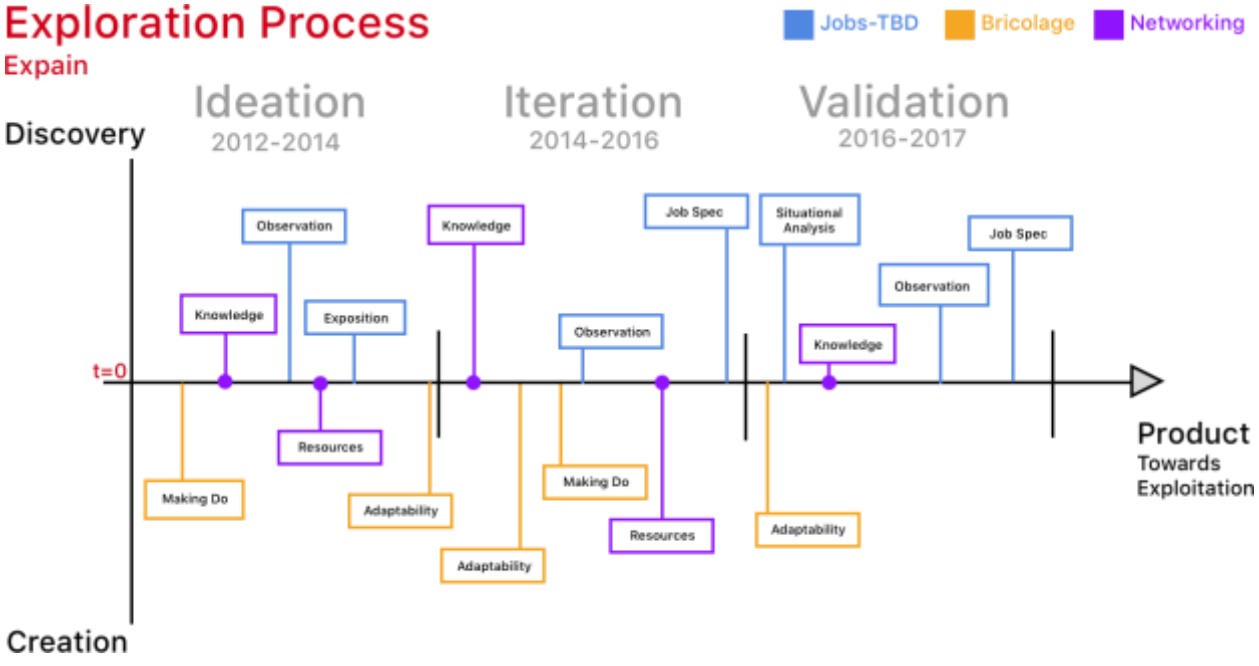

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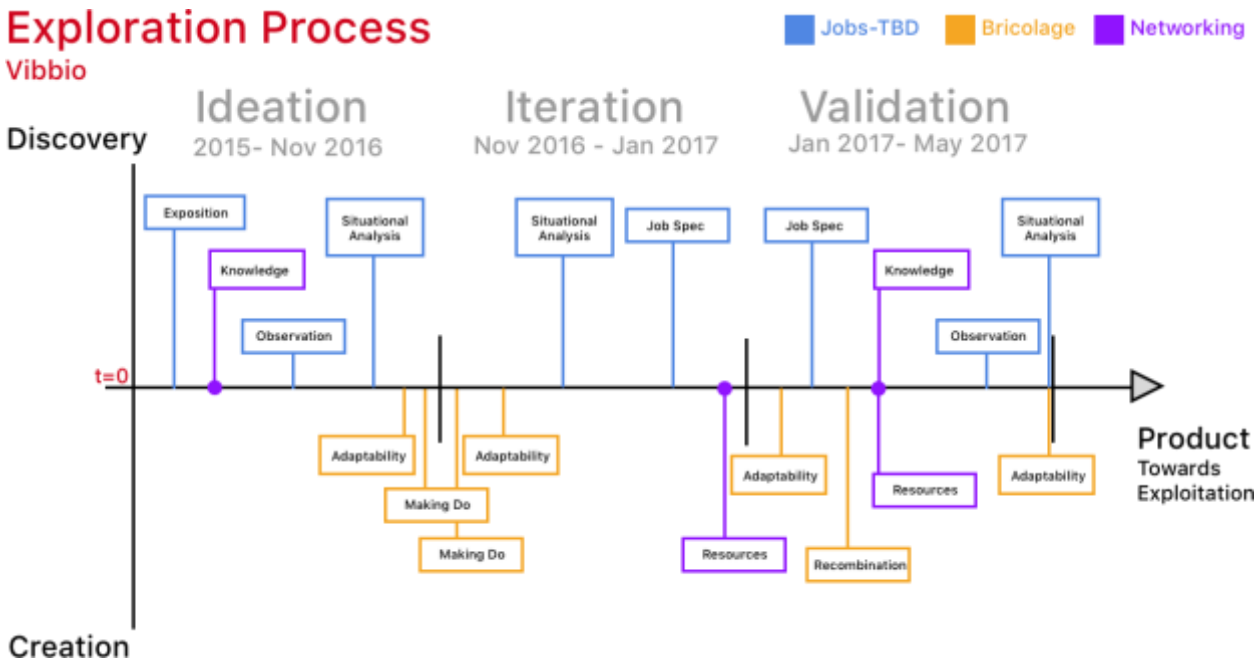
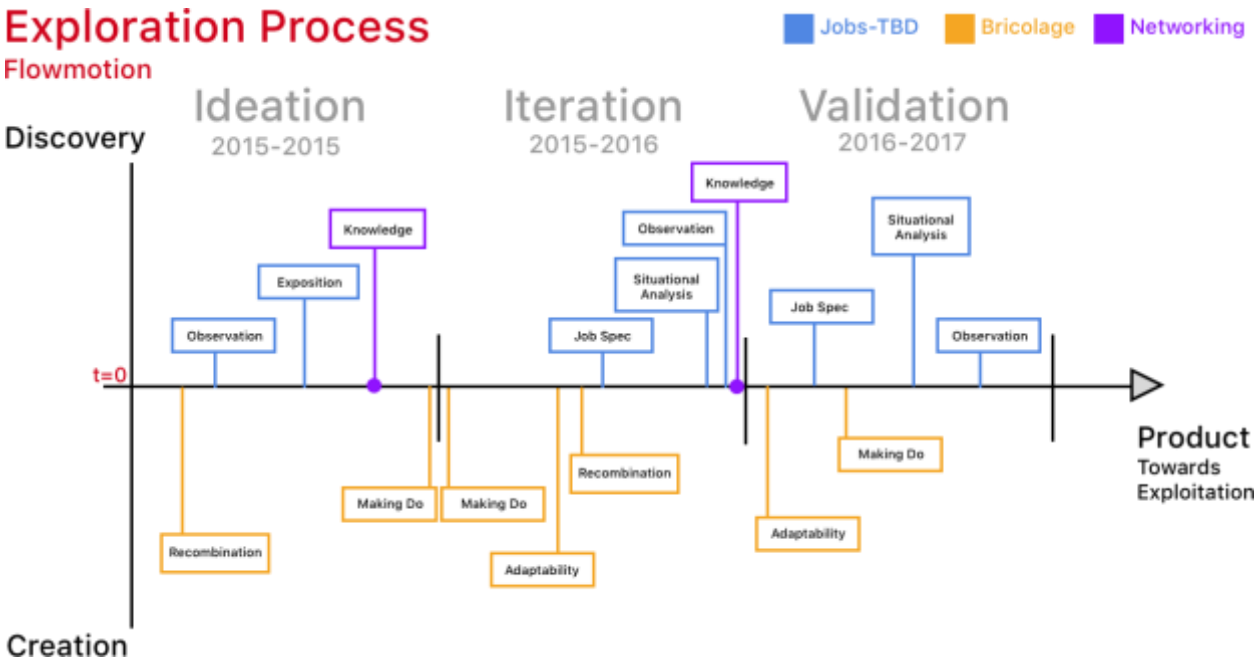
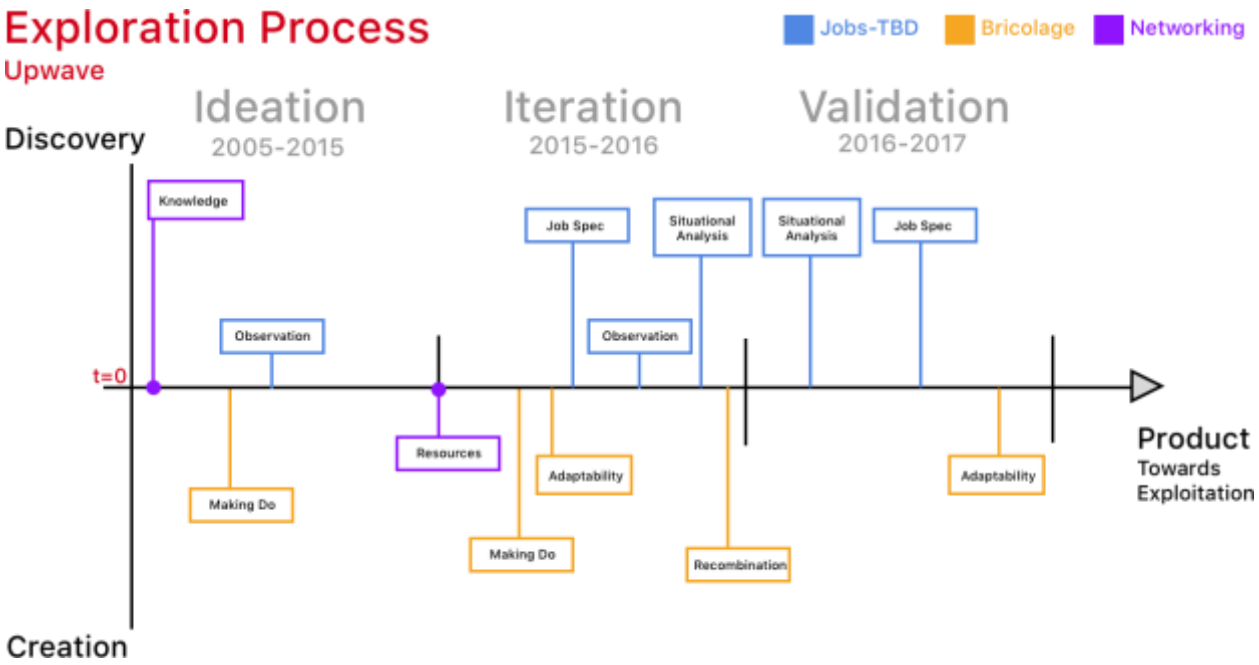


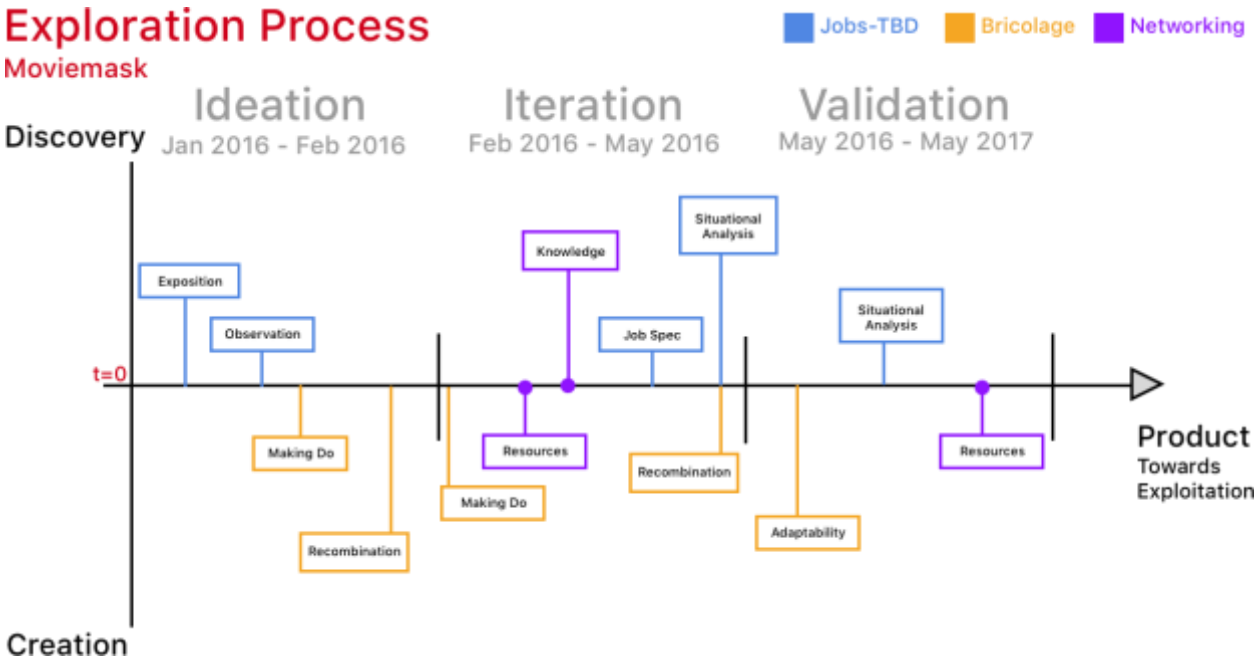
FlowMotion



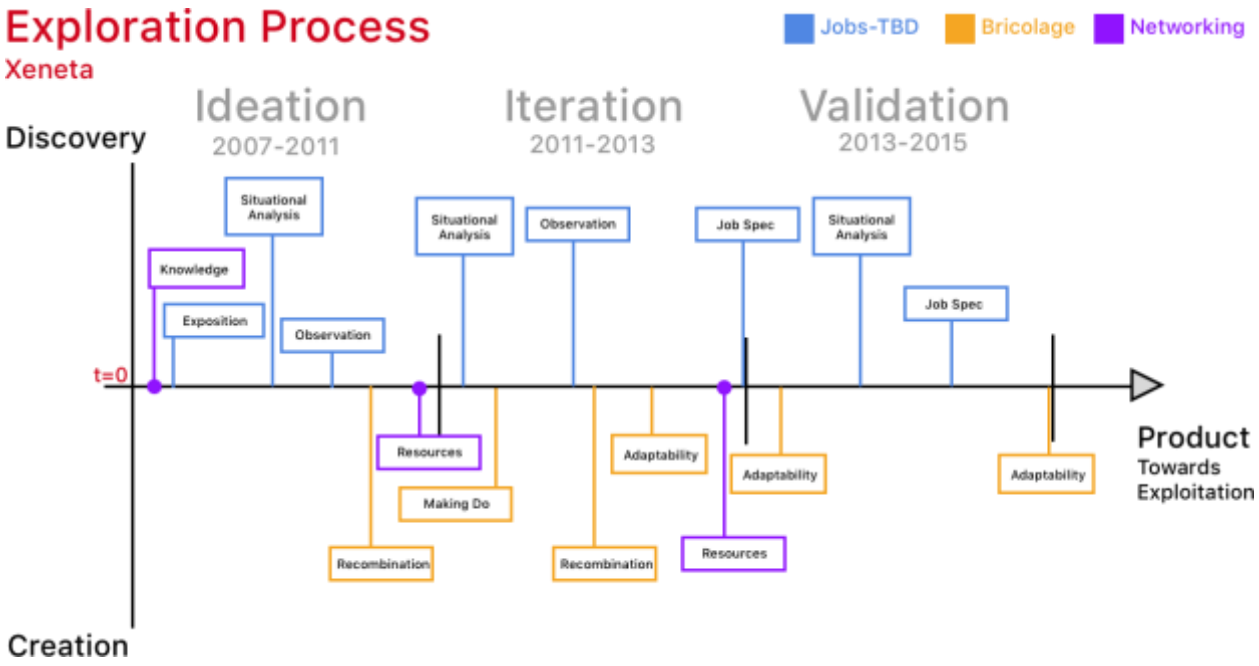
UpWave



MovieMask



Xeneta



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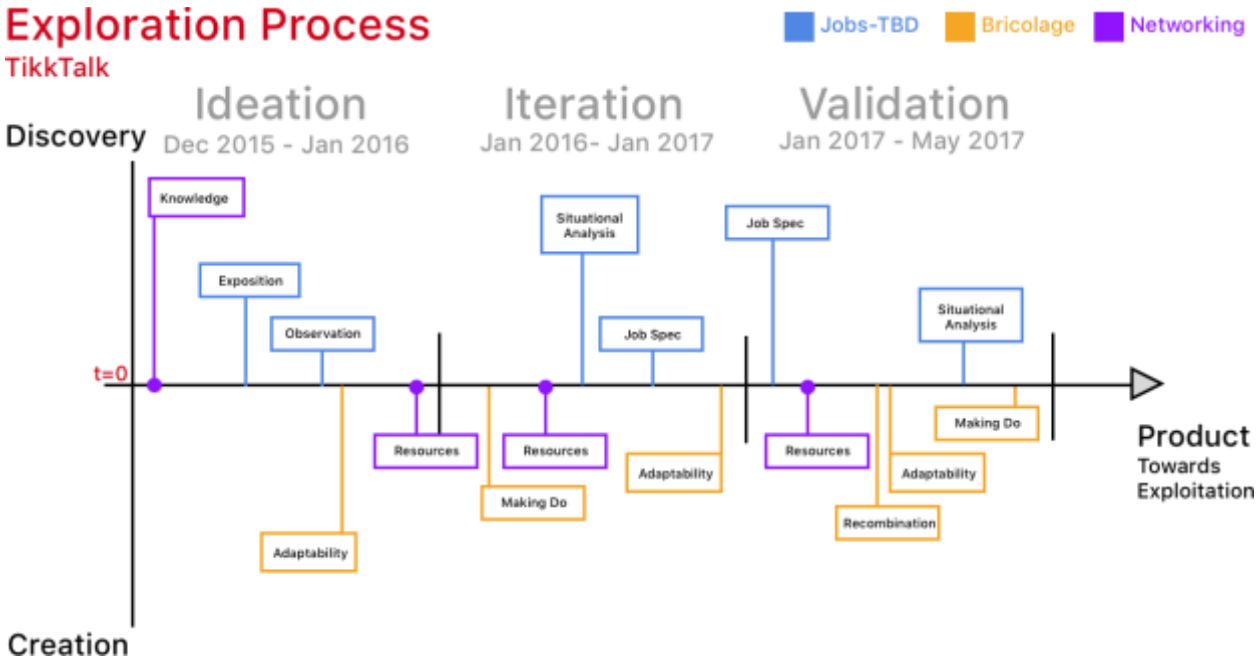
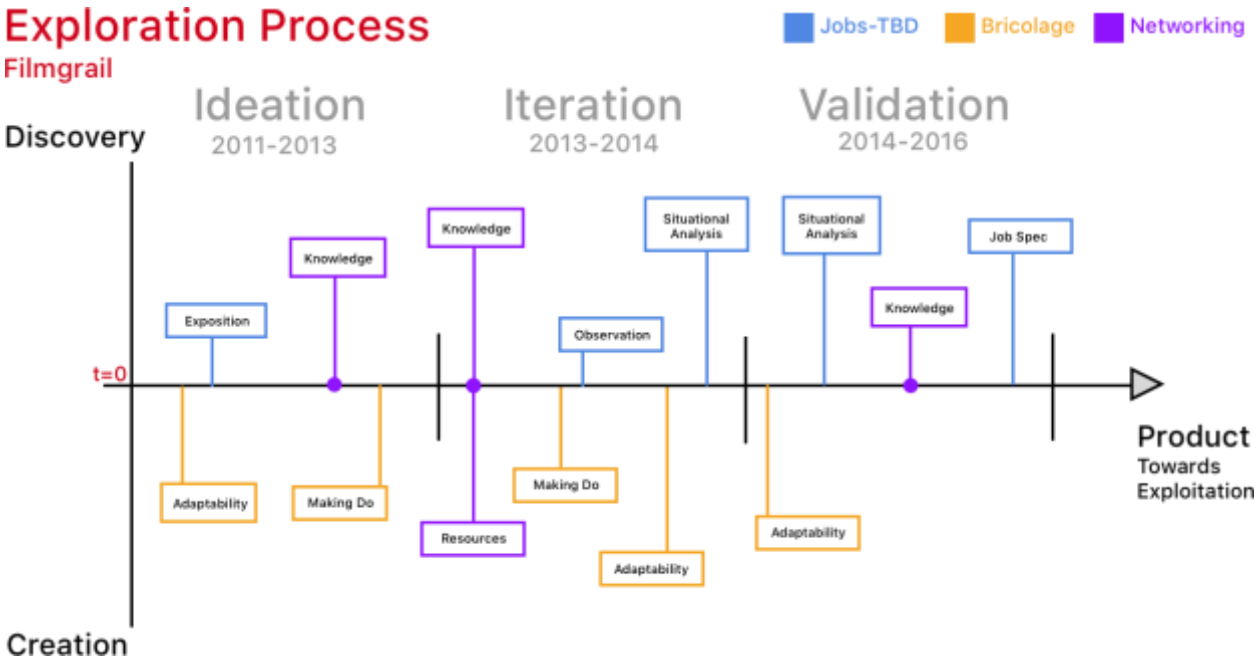


Filmgrail



Kahoot!