Finding product-market fit

How do software start-ups approach product-market fit?

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ABSTRACT

Title: Finding product-market fit.

Background and problem: Software start-ups have a significant positive impact on the global economy, but most of the ventures fail within two years of being founded. The predominant cause of failure for start-ups is that they do not find product-market fit. Despite this, methodologies designed to facilitate new product development are struggling to get adopted, as they are found to be difficult to implement in practice. Prior findings indicate that software start-ups prefer using more lightweight methodologies, or none at all.

Purpose: To extend the knowledge-base of how software start-ups approach product-market fit with their innovations. Furthermore, it is also to discover their rationale behind their choices. The goal is to contribute insights that can be used to create or customise methodologies that can help software start-ups when approaching product-market fit.

Method: The study is a qualitative and inductive multiple-case study, that is comparative and cross-sectional. The empirical material has been collected from 19 software start-ups, using semi-structured interviews. A conceptual model was constructed from the theoretical framework, and provided the foundation for a matrix that was used to thematically analyse the empirical material – emergent findings were added to the matrix.

Conclusions: Four conclusions were drawn in this study. Firstly, four archetype approaches for finding product-market fit were identified: The ‘Scientific’, ‘Testing’, ‘Market Research’, and ‘Ad Hoc’. Secondly, the study support previous research which shows that software start-ups prefer lightweight methodologies to agile and traditional methodologies. Thirdly, there is a preference to engage in activities that have a direct and visible impact on the offering and the venture. Supporting activities to prepare and evaluate tests was regarded as cumbersome and counterproductive. Finally, certain portrayed tools for gathering customer feedback are shown to not always be applicable. The study provides evidence that such tools can be ineffective when used on professionals, and not consumers.
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Abbreviations
MVP - Minimum viable product
NPD - New Product Development
OMTM - One-metric-that-matters

Key Words
Definitions

Start-up - “A human institution designed to create a new product or service under conditions of extreme uncertainty” (Ries, 2011).

Software-as-a-Service - A method for distributing software using the internet, referred to as running the application in the cloud; eliminating the need to install and run the application on the client device. This allows the offering to be deployed, developed, scaled, and maintained continuously (Marston, Bandyopadhyay & Ghalsasi, 2011).

Software start-up - In this study the term ‘software start-up’ will be used for start-ups which have a software-as-a-service offering.

Product-market fit - A state when: i) There is a willingness to pay for the firm's offering. ii) There is an economically viable way of acquiring customers. iii) The market is large enough to sustain the business (Thoring & Mueller, 2011).

Problem-solution fit - An indication that a specific customer problem that has been identified can be solved by a particular solution - showing that the offering has a business potential (Hokkanen, Kuusinen, & Kaisa Väänänen, 2016).

Innovation - A product or a service that has a certain degree of novelty, which in turn creates space for a business opportunity. The novelty can stem from new market knowledge, new technical knowledge, or both (Saemundsson & Dahlstrand, 2005). New knowledge can be placed on a continuum ranging from new to the world, new to an industry, new to a firm, or new to a business unit (Schilling, 2013). It can also be new to the market (OECD, 2015). In this study, ‘new to the market’ is set as the required level of novelty for an innovation.

Lightweight methodology – Collective name for methodologies where software start-ups have cherry picked different elements from agile methodologies, without applying them in whole (Paternoster, Giardino, Unterkalmsteiner, Gorschek, & Abrahamsson, 2014).

Alpha Prototype – A functional prototype that is tested internally to assess whether it delivers its intended performance (Ozer, 1999).
Beta Prototype – A functional prototype that is tested by external individuals in their own user environment during a limited period to report their experiences (Ozer, 1999).

Gamma Prototype – A functional prototype that is used indefinitely by customers or users so that issues can be reported for continuous improvement (Ozer, 1999).
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1. Introduction

The first chapter of the study provides the reader with an introduction to the background of the field, and a problem statement. After the introduction, the reader is acquainted with the research question and the purpose of the study. Furthermore, limitations and delimitations of the study are considered to provide a sense for the scope of the study. The chapter concludes with an outline of the study that will provide the reader with an overview which facilitates the understanding of the structure.

1.1 Background

According to Blank (2013), start-ups play an essential role in the global economy, which is experiences forces of disruption and globalisation. Software start-ups have a significant positive impact on the market and the global economy (Paternoster et al., 2014). Despite all the success stories of start-ups, Paternoster et al. find that the majority fail within two years of their creation. A recent study showed that as much as 42 % of start-ups fail because they do not have a customer for their offering (CB Insights Report, 2016). According to Feinleib (2012), everything a start-up should do, or does, is related to finding product-market fit. Product-market fit is a state when: customers are willing to pay for the offering, there is an economically viable way of acquiring customers, and a large enough market to sustain their business (Thoring & Mueller, 2011). The main challenge start-ups face is to find product-market fit before they run out of resources (Fagerholm, Sanchez Guinea, Mäenpää, & Münch, 2014).

The realisation of how increasingly important start-ups are for the economy, has led to an urgency in understanding how financial constraints start-ups are facing can be relieved (Ebben 2009). According to Lam (2010), actions to reduce financial constraints for start-ups can be observed internationally, where governments establish policies for fostering new venture creation, as a mean to create competitive advantages for their economies. However, both Lam and Ebben argue that to successfully boost new venture creation, the focus should be shifted from relieving financial constraints, to educating start-ups in how to operate within their constraints. This is supported by Paternoster et al. (2014), who claim that understanding how start-ups can take advantage of work practices is essential to support new venture creation.
Due to an increasing market turbulence, today's economy is not only fast paced, but also unpredictable. This turbulence stems from increasingly interconnected markets and results in unexpected challenges for firms, such as disruptive offerings from innovators in other fields (El Sawy & Pereira, 2013). This new context favours agility rather than advantageous positioning, and has made digital offerings increasingly popular among firms (ibid). Furthermore, this trend can be observed among start-ups, as the number of software start-ups are growing more than ever before (Bosch, Holmström Olsson, Björk & Ljungblad, 2013).

By adopting flexible methodologies, start-ups can align their new product development activities with changes in the business strategy simultaneously, which allow them to develop their offerings faster while addressing market uncertainties (Paternoster et al., 2014). It is found that start-ups that are flexible may benefit disproportionately from innovations, compared to those with more rigid structures (Hyytine, Pajarinne, & Rouvinen, 2015).

1.2 Problem Statement

The main priority for start-ups is to find product-market fit for their innovations as quickly as possible (Giardino et al., 2016). However, when trying to reach product-market fit, most start-ups fail due to internal issues (Startup Genome Project, 2012). It was found that most start-ups scale their operations before they have found product-market fit. This means that they invest too much time and money into e.g. the development of their product, in acquiring customers, or the business model before they have established the customers’ requirements (ibid). According to Hokkanen and Leppänen (2015) a start-up should first of all find the problem-solution fit, and then the product-market fit, before finally looking to scale the venture. This is in line with Timmons, Adams, and Spinelli (2009), who argue that a fast assessment to the potential of a venture is of outmost importance, as it will help to better understand where to invest resources.

Agile methodologies are often suggested as a mean to help start-ups become successful, as close customer collaboration and feedback loops let them focus on creating customer value (Bosch et al. 2013). However, it has been found that software start-ups find agile practices to be difficult to implement in practice (ibid). According to Paternoster et al. (2014), both agile and traditional methodologies struggle to get adopted by start-ups. Instead, lightweight methodologies tend to get adopted, where start-ups can pick and choose practices which aim
to facilitate reactivity, speed, and flexibility, by focusing on early prototyping driven by
customer feedback (ibid). Furthermore, due to a strong belief in the potential of their ideas,
many start-ups want to minimise time and resources spent on gathering customer feedback, as
they perceive validation of their ideas as a waste of time (Hokkanen & Leppänen, 2015).

Studies on start-ups’ early stage development has been scarce (Zott & Huy, 2007). To be able
to successfully support software start-ups, it is essential to understand how they operate
(Paternoster et al., 2014). With research showing that both traditional and new methodologies
are struggling to be adopted by start-ups - despite the urgency to find product-market fit - the
understanding for start-ups’ preferences need to be deepened.

1.3 Purpose of the Study

The purpose of this study is to extend the knowledge-base of how software start-ups approach
product-market fit with their innovations. Furthermore, it is also to discover their rationale
behind their choices. The goal is to contribute insights that can be used to create or customise
methodologies that can help software start-ups when approaching product-market fit.

1.4 Research Question

The research question of the study is:
How do software start-ups approach product-market fit?

With the following sub-research questions:
- How do software start-ups gather information, regarding what changes to carry out?
- How do software start-ups evaluate the gathered information?
- What are software start-ups’ rationale for the specific tools used?
1.5 Delimitation of the Study

This study does not suggest which approaches to product-market fit that are preferable, or which ones that are the most successful. Neither does the study consider how well the respondents have used the suggested tools for gathering feedback, rather, the study is more interested in what they have done, and why they did so.

Only software start-ups were interviewed for the empirical material. Thus, generalisations to other types of industries - where approaches to reaching product-market fit could be of equal interest - are disregarded.

1.6 Limitations of the Study

The interviews might be biased regarding the respondents’ recollection of previous events. If a respondent is not currently in the process of finding product-market fit, or has relevant data from that time, the accuracy of the information might be limited. The risk that respondents give biased responses to ‘brush up reality’ is also present.

Another limitation is in the data collection. The respondents in the study talked more about why they did what they did, and not as much about why they did not do certain things. This limitation risks skewing the analysis and conclusions in a direction that is more favourable for certain approaches.
2. Methodology

This chapter will provide the reader with an overview of the methods used in this study. The research strategy and the research approach, will be described and justified. Furthermore, a description of how the empirical material has been collected, and how the theoretical framework was established, will be presented. The criteria and rationale for the study’s sampling, as well as an overview of the respondents are given. Moreover, how the analysis of the empirical material was conducted will be described. Finally, the study’s ethical standpoint, and a summary of the chapter are given to the reader.

2.1 Research Strategy

2.1.1 Qualitative research

Qualitative research is not only predisposed to answer questions of what, when, where, or by whom, but can also answer questions of why and how (Denzin & Lincoln, 2005). A qualitative research strategy generates rich and detailed data that allows for interpretation, which is a must to discover respondents’ intentions, motives, and deeper meaning (Yin, 2011). Furthermore, quantitative research is more concerned with the effects or outcomes of an intervention, while qualitative research concerns the mechanisms within the ‘black box’ that results in a certain outcome (Morse, 1994). Thus, the nature of the study’s research question motivates the choice of a qualitative research strategy, as the study is about understanding how start-ups approach product-market fit, and why they choose to operate the way they do, i.e. what it is that goes on inside the ‘black box’.

In comparison with a quantitative research strategy, qualitative research strives for a closer involvement with the studied subject, and focuses on understanding the social world by considering and interpreting the perspective of the respondents (Bryman & Bell, 2011). Because of the comparative nature of the study, it is essential to understand the start-ups’ individual contexts for a meaningful analysis. The qualitative nature of the study limits the generalisability of the findings. The findings cannot be generalised towards a population, rather, they can only be generalised towards theory (Yin, 2009).
2.2 Research Approach

Regarding which type of research approach to choose for a study, there are three choices: deductive, abductive, and inductive (Alvesson & Sköldberg, 2008). Which one to choose depends on the purpose of the study.

Deductive reasoning is suitable when there is a richer theoretical body on a topic that can be tested with empirical studies; generalisations can later be made from the results (Pålsson, 2001). Deductive reasoning builds upon existing theory about a particular domain and scrutinises it by deducing a hypothesis, predicting an outcome. The deduced hypothesis is to be tested through observations - i.e. moving from the general to the specific. The purpose of a deductive reasoning is to test if the existing theory can predict and explain what is being observed.

Abductive reasoning is used when previous research and theories are scrutinised and compared to empirical material, to either accept or discard existing theories (Pålsson, 2001). Abductive reasoning can be said to be a mix of the inductive reasoning and deductive reasoning, giving equal emphasis to empirical evidence and previous theories in the field. The line of reasoning when using an abductive reasoning is to inference to the best explanation to the cause of an observation (Douven, 2011).

Inductive reasoning is primarily used when a researcher wants to form new understanding in a certain field. When there is a lack of previous research, or that extant research needs to be nuanced, inductive reasoning allows for general conclusions and generalisations to be drawn from empirical observations (Pålsson, 2001). The inductive approach moves from observations and findings towards the creation of new theory - i.e. from the specific to the general (Bryman and Bell, 2011).

According to Bryman and Bell (2011), an inductive strategy is used to draw generalizable inferences out of observations. This is in line with Yin (2009), who argues that an inductive approach may serve the purpose of determining whether emergent concepts can be derived from the interpreting of findings in qualitative studies. The existing theoretical body do not adequately explain why software start-ups struggle to adopt agile methodologies, and needs to be nuanced, this motivated an inductive strategy for this study. Furthermore, an inductive
strategy suits the exploratory nature of the study, with the purpose to contribute with an increased understanding regarding how start-ups approach product-market fit, and why they do what they do.

According to Yin, a successful inductive stance permits observations to drive the development of categories, propositions, and meaning, based on the actions discovered in the field. To begin a study with preconceived notions, i.e. a theoretical framework, can be considered a deductive approach. However, Yin presents a paradox between what can be considered an inductive and deductive approach, as an inductive research design can include preconceived theoretical propositions. Yin (2011) argues that even if a study has such a design, it can be inductive. This study follows an inductive design as the one presented, where a conceptual model has acted as a frame of reference, but each case is presented and analysed independently, to establish categories, propositions, and meanings, which reflect the cases’ processes.

2.3 Research Design

2.3.1 Multiple-case Study

Bryman and Bell (2011) suggest that case studies can provide an understanding for individual contexts, and that they are suited for gathering in-depth data. This research design allows for exploring what the start-ups approaches to find product-market fit looks like, and to understand the respondents’ rationale behind their choices. This line of reasoning is supported by Yin (2009), who argues that a case-based research design is pertinent for qualitative studies where the “how” or “why” of contemporary events are sought after. Yin states that a multiple-case study is suitable when one wants to understand differences and similarities between cases. Furthermore, this allows the researcher to determine whether findings are valuable (Eisenhardt, 1991). Solberg, Søilen, and Huber (2006) argue that the purpose of case studies is to provide empirical findings which can lead to a fruitful discussion about concrete problems, and that they are suitable when problems are open-ended and there are difficulties in finding precise solutions. By having a multiple-case design, this study can discover ample data which then can be compared between the cases. This will let the study fulfil its purpose of extending the knowledge-base on how software start-ups approach product-market fit.
2.3.2 Comparative

To further understand how start-ups approach product-market fit, a comparative design enables the contrasting of the different cases against each other, as such a design allows for the identification of shared patterns between the cases, which are helpful for explaining their similarities and differences (Bryman & Bell, 2011). The high level of detail generated from multiple-case studies is beneficial for the comparative design, as a rich body of data makes it more potent (ibid). Yin (2009) argues that a comparative research design facilitates the researcher’s analysis of situations where certain theory may or may not be applicable. Thus, the comparative design helps explaining aspects that the theoretical framework cannot, as there are likely to be many different forms of approaches that startups can take to find product-market fit.

2.3.3 Cross-sectional

Cross-sectional data can be said to provide a snapshot of a situation at a specific point in time (Lavrakas, 2008). Lavrakas argue for several advantages of having a cross-sectional research design. First, data can easily be collected from multiple individuals, organisations, or other entities. Secondly, attrition of the data collection is not an issue, as it often is in longitudinal studies. Thirdly, respondents are more cooperative, which increases the quality of the data. Fourthly, a cross-sectional research design is a pragmatic choice, as it is less expensive and time consuming to carry out.

A disadvantage of a cross-sectional design is that disables the possibility to infer significant causal relationships (ibid). However, the comparative design is a counterweight to this inherent limitation, as it enhances the predictive power of the relationships that are found. But as the study captures a situation at a single point in time, it risks not providing a representative image of the situation. Therefore, caution must be taken in the analysis and conclusion of the study, as it is not certain that the cases will generate the same output over time (Bryman & Bell, 2011).

2.4 Establishing the Theoretical Framework

The theoretical framework was constructed as a funnel; starting with the general and moving to the specific. New Product Development (NPD) serves as the foundation of the theoretical framework. NPD theory strives to explain the activities and processes within firms when they try to bring new offerings to the market, thus making it well suited for the study. However, as
the study is not only concerned with the development efforts of firms in general, but specifically so in software start-ups, a more niched theoretical body was required. Paternoster et al. (2014) state that agile methodologies are considered to be especially viable in the new product development of software start-ups, as they embrace change in a way that allow for the development of the offering simultaneously to the business strategy.

After examining several agile methodologies, Design Thinking and the Lean Startup was chosen, as they were the ones most suited for the purpose of this study. The choice was further supported by Mueller and Thoring (2012) who argue that combining the Lean Startup and Design Thinking provides a more complete view of innovation strategies. Furthermore, Design Thinking and the Lean Startup’s increasing popularity over the last years - seen in search trends and scientific publications - further motivated the inclusion of the two methodologies. Finally, the theoretical framework is concluded by condensing these two approaches into a conceptual model, to act as a reference when constructing the interview guide (see section 2.5.6), as well as the template used in the analysis.

2.5 Data collection

2.5.1 Data collection method - Semi-structured Interviews

In-depth interviewing was chosen as the method to gather the empirical material. To understand what aspects that influence decisions regarding the cases processes towards product-market fit, a broad range of implicit and explicit data had to be collected. Yin (2011) argues that qualitative studies and interviews allow a researcher to dig deeper into the data set, as the researcher can read between the lines and understand the meaning behind the words of the respondent. This notion of depth in interviews is supported by Bryman and Bell (2011) who argue that interviews in qualitative research are well suited for generating rich and broad data that enable a deeper understanding of the topic.

The various interviewing types that exist can be placed along a continuum ranging from open-ended to structured. In a structured interview, all questions a pre-defined and posed to the respondent in a neutral manner. The benefit of the structured interview is that the close-ended questions provide data that is closely related to the topic, leading to an improved replicability of the study as the data is comparable (Bryman & Bell, 2011). On the other hand, in open-
ended interviews, the researcher engages in a mutual conversation with the respondent, and the questions are not predefined. An advantage of open-ended interviews is that the open nature of the questions lets the conversation flow freely, and the interviewer can probe into areas of interest, thus generating richer data that can generate new theory (Yin, 2011). The structured and open-ended approaches are pertinent for different types of studies, where the result sought after differs. In the middle of the continuum, one can find the semi-structured interview.

The semi-structured interview is a combination of the two previous approaches to interviewing, where predefined questions are mixed with emergent follow-up questions, and the order of the questions can vary with the flow of the conversation (Bryman & Bell, 2011). The benefit of the semi-structured approach is that it allows the researcher to probe deeper while maintaining focus on the topic at hand. Semi-structured interviewing thus allows the researchers to have an explorative approach, as it opens the possibility of finding additional information that might have been overlooked in the preparation phase (ibid). As the study is inductive, the goal is to have emergent findings; no interview guide can saturate all potential findings. However, the findings still need to have a certain degree of comparability, because of the study’s comparative research design. Therefore, there must be a structure, while making room for reformulating and asking follow-up questions, when unexpected findings emerge. Semi-structured interviewing caters to these requirements, and was therefore considered to be a good choice.

The scope of this study requires hard facts on what types of approaches the respondents have taken to their processes to find product-market fit, but it also requires an understanding of the rationale behind the decisions taken. Therefore, a combination of close-ended and open-ended questions are needed, which makes semi-structured interviews appropriate to answer the study’s research question.

2.5.2 Sampling - Purposive sampling

For case-based studies Quinlan (2011) argues that two types of sampling are possible: first, probability sampling which provides a sample that is representative to the population. Secondly, non-probability sampling, which is not representative for the population. Given that this is a qualitative multiple-case study, probability sampling and a generalisation to the population is impossible (Yin, 2009). Instead, the findings may be generalizable to theoretical propositions, which may stem from academia and practice (ibid).
In case studies in the field of business, researchers can apply homogeneous purposive sampling, where a specific subgroup of cases with similar characteristics are chosen (Saunders, Lewis, and Thornhill, 2012). The criteria should reflect the scope and topic of the study, and by using a purposive sampling method, Yin (2009) argues that the study can generate rich and relevant data that can later be applied to firms with similar characteristics. By choosing a set of criteria for the cases in the sample, a transparent linkage is created between the cases and the study.

### 2.5.3 Criteria for the Purposive Sampling

As previously stated, the purpose of this study is to extend the knowledge-base of how software start-ups operate to reach product-market fit with their innovations. Three criteria were chosen to reflect the scope and topic of the study. First, the reason to study firms which are working on innovations is straightforward: there is no need to find product-market fit if there are no innovations. If one copies another actor on an existing market, the formula for success is already known, and no uncertainty regarding the offering needs to be faced. Therefore, the cases must have an innovative offering. Secondly, innovation can take place in many types of organisations. However, as the purpose of the study is to extend the knowledge-base of how software start-ups operate, that organisational type has specifically been chosen as a criterion, to provide the unit of analysis. Thirdly, both the Lean Startup and Design Thinking are applicable in start-ups from the day the venture is founded, therefore, traces of such methodologies can be visible in start-ups regardless of age. However, the Lean Startup was established in 2011. To have respondents older than that might bias the sample; making the analysis and conclusion less potent. Therefore, an age limit of 6 years was applied to the sample criteria.

To summarise, the chosen criteria for the purposive sampling are that respondents:

1. Should have an innovative offering, *(see section 2.5.4)*.
2. Should comply with the study’s used definition of a software start-up,
3. Should be six years old, or younger.
### 2.5.4 Sample

<table>
<thead>
<tr>
<th>Start-up</th>
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<th>Origin</th>
<th>Market strategy</th>
<th>Type of innovation</th>
<th>Novelty of innovation</th>
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<td>Market</td>
<td>Market</td>
</tr>
<tr>
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<td>Silicon Valley</td>
<td>B2B</td>
<td>Market</td>
<td>Industry</td>
</tr>
<tr>
<td>ShopChat</td>
<td>2016</td>
<td>Silicon Valley</td>
<td>B2B</td>
<td>Market &amp; Technology</td>
<td>World</td>
</tr>
<tr>
<td>Case Y</td>
<td>2014</td>
<td>Silicon Valley</td>
<td>B2B / B2C</td>
<td>Market</td>
<td>World</td>
</tr>
<tr>
<td>Verbling</td>
<td>2011</td>
<td>Silicon Valley</td>
<td>B2C / B2B</td>
<td>Market</td>
<td>Industry</td>
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<tr>
<td>Ever App</td>
<td>2015</td>
<td>Silicon Valley</td>
<td>B2B</td>
<td>Market &amp; Technology</td>
<td>World</td>
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<tr>
<td>StudySoup</td>
<td>2014</td>
<td>Silicon Valley</td>
<td>B2C</td>
<td>Market</td>
<td>Market</td>
</tr>
</tbody>
</table>

(*Table 1 – Sample*)

Regarding the market strategy within the sample, the respondents have been classified according to their primary paying customer. In some cases, respondents have an equal focus on business-to-business and business-to-consumer, and some of the cases have transitioned from one type of market strategy to another, which is indicated by arrows.
2.5.5 Operationalising Innovation

*Innovation* is a word with many connotations, and with many different implications depending on the interpretation of it. However, a shared characteristic is that the innovation has a certain degree of novelty, which in turn creates space for a business opportunity. Saemundsson and Dahlstrand (2005) argue that young technology-based firms can exploit business opportunities because of either new technical knowledge (NT), or new market knowledge (NM). In their paper, Saemundsson and Dahlstrand created a matrix (see fig. 1) recognising these two dimensions in relation to the novelty of the opportunity and the implementation of an innovation. This suggests that start-ups can try to exploit opportunities with varying degrees of novelty. First, existing market and existing technology knowledge, which suggests incremental innovation. Secondly, new technology and existing market knowledge. Thirdly, existing technology and new market knowledge. Fourthly, new technology and new market knowledge. When new knowledge is exploited, it may result in radical innovation.

![Matrix for types of business opportunities in young technology-based firms](image)

(Figure 1. *Types of business opportunities in young technology-based firms* - Saemundsson and Dahlstrand, 2005)

When selecting cases to include in this study, the authors followed the dimensions suggested by Saemundsson and Dahlstrand. The cases had to fulfil the criteria for being innovative by having new market knowledge, new technical knowledge, or both. Schilling (2013) argues that the novelty of an innovation can be placed on a continuum ranging from new to the world, new to the industry, new to the firm, or new to a business unit, with new to the world being the most radical form of innovation. Furthermore, an innovation can be new to the market. The OECD (2015) defines new to the market as an innovation that is new or significantly improved and is released to the market before any other competitors. When operationalising the degree of novelty, start-ups with an offering that is new to the market has been set as the minimum required level of novelty. The innovativeness of the cases was judged solely by the authors, in accordance to the proposed criteria presented above.
2.5.6 Forming the Interview Guide

The basis of the interview guide was outlined to map the actions of the respondents in their market validation process. Furthermore, the interview guide was designed to capture the rationale behind the development decisions of the business idea, from its initial state to its current one. This included questions that were directly connected to how things were at different points in time, such as: who the customer was, how the income model was structured, and the start-up’s offering. The questions in the interview guide were formed using the conceptual model as guidance (see section 4.2), to ensure that the questions covered the scope of the study. Furthermore, the questions were made neutral in their terminology, as some of the respondents were likely to be knowledgeable of the terms used in this study, and could therefore have answered in a way that they perceived as favourable. Other respondents might not be familiar with specific terminology; therefore, it is also important to use a language that is comprehensible to all respondents (Bryman & Bell, 2011).

Eriksson and Kovalainen (2008) suggest that by posing open questions, the researcher can obtain richer data and the respondents can talk more freely about what they perceive as important. To make sure that the interview guide reflected the topic of the study, and that leading questions were avoided, pilot interviews were conducted with master’s students and post-graduates in the fields of entrepreneurship and innovation. After the first two interviews with respondents, the interview guide was modified slightly to reduce repetitive overlapping questions; this was done to increase the quality of the interview. Conducting pilot tests is supported by Bryman and Bell (2011), as it can help clearing out confusing or unclear questions from the interview guide.

Two questions were added to the interview guide to make some of the questions more specific. The first question to be changed was about the income model; this answer was originally thought to be captured in the question about the business model. The second question was about having a pre-defined threshold for when a test was to be accepted or rejected, this question was originally thought to be captured in the question regarding having a formulated assumption before testing. These follow-up questions were added to the interview guide after four interviews had been conducted, as they had been brought up in those interviews.
2.5.7 Execution of the data collection

Each interview was conducted with both authors of the study present. Naturally, this is a time-consuming endeavour. However, it was deemed necessary by the authors as it ameliorates the overall quality of the data and analysis, by providing two viewpoints and additional follow-up questions during the interviews. Between interviews, the authors took turns in having an active and a more passive role, with the passive role focusing on note-taking, follow-up questions, and general observations of the respondents, for the purpose of triangulating the gathered data, further discussed in section 2.6.2.

To increase the quality of the interviews and data gathering, the authors chose to conduct in-person interviews, as face-to-face interviewing is appropriate in situations where the researcher wants to create data with a significant depth of meaning (Ritchie and Lewis, 2013). Another reason for choosing in-person interviews is that respondents are usually more comfortable with doing in-person interviews, which increases the quality of the answers (Ljungberg, 2016). Conducting interviews over the telephone that are longer than 30 minutes can be hard to carry out, and limits the gathering of valuable data; in-person interviews are better for longer sessions and obtaining richer data (Frey, 2004). However, due to difficulties in scheduling, the interview with the respondent StudySoup was conducted using video call.

A third reason for choosing in-person interviews is that the interviewer can observe the respondent and act on cues of uncertainty, which will let the interviewer clarify questions and facilitate the interview, and ultimately improve the quality of it (Bryman and Bell, 2011). When interpreting, and analysing the empirical material collected through the interviews, some indecisive answers from the respondents were discovered. To increase the reliability of the interpretation, the respondents were sent follow-up questions via e-mail, to provide more complete data. Yin (2011) argues that allowing participants to give feedback or complementary information increases the validity of the study. To prevent any misunderstandings from being present in the final version of the study, the final draft was shared with all participants, who received one week to review it and make sure that no misunderstandings had taken place.

The respondents were found via personal contacts, and public lists of start-ups. First, the start-ups were contacted via e-mail or LinkedIn to see if they were available for an interview. If they were willing to participate, a time and date were decided for the interview. Secondly, to
increase the probability of a successful outcome of the interviews, the respondents were given a short brief of the topic at least three days before each interview - giving them ample time to prepare. The authors contacted 43 potential cases, and 19 chose to participate. Thus, the study had a response rate of 44 %.

The interviews were carried out both in Swedish and in English, meaning that all quotes and expressions used by the respondents have been freely translated by the authors of the study.

2.6 Analysis of the Empirical Material

2.6.1 Template Analysis

Bryman and Bell (2011) stress the importance of keeping the participants’ terminology intact as much as possible, and suggest the construction of a matrix where discoveries are inserted. Furthermore, they argue that this matrix should be constructed before conducting the interviews with the help of a theoretical framework. The categories in the template analysis was constructed before the interviews, using the conceptual model. The template analysis enabled a comparison between the cases, to create a general overview of their practices. According to Saunders et al. (2012), and Bryman and Bell (2011) a template analysis provides a structure for analysis that facilitates the finding of patterns and links.

Cresswell (2013) suggests a sequential process when analysing the empirical material. First, he argues that one should organise the data by creating categories, and then read through the material to discover themes and codes. Secondly, Cresswell stresses the importance of describing these themes and codes, and to put them into a context to make them understandable. Thirdly, after breaking down the information into categories, reconstructing the information in novel way is good for finding connections. Finally, to make an academic contribution, it is important that an analysis is made, so that the gathered information can be generalised. However, a template analysis risks being biased by the researchers, which can result in data being incorrectly assigned to categories. Therefore, it is important there is transparency in the analysis, and that the findings are peer-reviewed before being published.

Patel and Davidsson (2003) argue that it is beneficial to iteratively perform analyses, as this reduces the risk that vital information is overlooked, or that respondents might have
misinterpreted certain interview questions. To minimise these risks, the interviews in this study were fully transcribed, and then re-read several times during the analysis.

2.6.2 Execution of the Analysis

The analysis was conducted by first creating a matrix of themes, with the help of the conceptual model presented in section 4. All transcripts of the interviews were first coded into the identified themes separately by both authors. Afterwards, they were discussed by the authors, to improve the quality of the analysis. When the authors identified something that lied outside of the conceptual model, and both authors agreed that it could not be coded into an existing theme, it was coded as an emergent finding and added to the matrix. To make sure this theme had not gone unnoticed in earlier interviews, already coded transcripts were looked through again, to further strengthen the reliability of the findings. All findings were related to the structure of the conceptual model, analysing each theme separately. The findings were then compared between the cases. Finally, emergent themes were analysed by adding new theory.

2.6.3 Validity, Reliability, and Replicability of the Study

Golafshani (2003) discusses three primary concerns to ensure the quality of a scientific study. First, validity concerns how accurately the study captures what is intended in the research. Secondly, reliability concerns the extent to which the results are consistent over time and can be reproduced. Thirdly, replicability concerns the ease for someone to recreate the methodology of the study. It is argued by Paton (2001) that validity and reliability is something that qualitative researchers should be concerned about when designing their research, as it will determine the quality of the study. Golafshani (2003) states that there can no validity without reliability, and argues that the two concepts are intertwined; that if one has validity, one also has reliability.

The citation above incentivise putting the focus on achieving high validity in the study, as it will create reliability by default. To achieve validity, triangulation was used, as suggested by Golafshani (2003). A successful triangulation of the data was achieved by: firstly, both authors were present during all interviews. Secondly, notes were taken during the interviews, and they were recorded and transcribed in full. Thirdly, all data was verified with the respondents to ensure that no misunderstandings or errors had taken place. Finally, both authors coded the
same interviews separately, and then compared their interpretations. By taking these measures, the quality in terms of both validity and reliability was assured for the study.

To increase the replicability of this study, measures have been taken to improve the transparency of the research. This was done by including both the English and Swedish version of the interview guide in the appendix (see appendix 8.4 and 8.5). The downside of conducting semi-structured interviews is that an exact reproduction of the interview questions is impossible, thus reducing the study's replicability. However, the core data that needs to be collected to perform the analysis is covered by the interview guide. Another measure that was taken to increase the replicability, was to have precise criteria in the sampling (see section 2.5.3).

2.7 Ethical position

In academic research, it is of great importance that certain ethical guidelines are followed. Collis and Hussey (2009) suggest three primary guidelines to ensure that a scientific study is conducted in an ethical manner. First, all participation should be voluntary. No respondent should in any way be forced or coerced into participating. Secondly, financial and material rewards should not be offered to the participants. By providing material rewards to the respondent, the sample risk being biased. Thirdly, all respondents should be offered anonymity so that they know that their identity will not be shared without their approval. Not only does the possibility of being anonymous affect the quality of the answers, but it can also contribute to a higher response rate. There were two respondents who chose to be anonymous in the final report, and have been labelled as “Case X” and “Case Y”. In addition to these principles, Yin (2011) argues that the respondents should be able to validate the data collected from them, and that they should be informed how the data will be shared. Furthermore, Yin argues that the researcher should assess the potential risks and benefits from the research, to minimise the risk of harm to the respondents.

To ensure that this study lived up to the ethical standards required for scientific research, the researchers followed several steps. Firstly, in the initial contact with the respondents, they were informed of the intent and scope of the study and asked if they wanted to participate. They were also told that they may be anonymous, and how their data would be shared and handled. Secondly, no material rewards were offered to the respondents. Thirdly, before the study was
published, all respondents were sent a copy of the study, and given five workdays to report if any misunderstandings or errors had occurred, and if they wanted to be anonymous. Fourthly, information that might be sensitive has been decoupled from the respondents in the analysis and conclusion.

### 2.8 Summary of the Methodology

<table>
<thead>
<tr>
<th>Considerations</th>
<th>Choices</th>
</tr>
</thead>
<tbody>
<tr>
<td>Research approach</td>
<td>Inductive approach.</td>
</tr>
<tr>
<td>Research strategy</td>
<td>Qualitative.</td>
</tr>
<tr>
<td>Research design</td>
<td>Multiple-case study, that is comparative and cross-sectional.</td>
</tr>
<tr>
<td>Data collection</td>
<td>Semi-structured interviews with close-ended and open-ended questions. One hour long face-to-face interviews.</td>
</tr>
<tr>
<td>Sampling</td>
<td>Purposive - Set of three criteria used to select respondents to ensure comparability. The criteria are: Younger than six years old, have an innovative offering, and be a software start-up.</td>
</tr>
<tr>
<td>Analysis</td>
<td>Template analysis - Interviews coded separately several times by the researchers, then compared. Data inserted into a matrix for structured analysis.</td>
</tr>
</tbody>
</table>

(Table 2 – Summary of the Methodology)
3. Theoretical framework

This chapter will provide the reader with a theoretical foundation, and is constructed as a funnel. Firstly, New Product Development is presented to provide a setting. Secondly, agile methodologies are presented as a way to cope with turbulent market conditions. Finally, the Lean Startup and Design Thinking are presented as agile methodologies for software start-ups approaching product-market fit.

3.1 New Product Development

New product development is a field of study that includes different methods for firms when working with bringing new innovations and products to the market. For the innovation process to be successful, firms must achieve three sometimes conflicting goals simultaneously. Firstly, to maximise the product’s fit with the customers’ requirements. Secondly, minimising the cycle time in the development. Thirdly, controlling the development costs (Schilling, 2013). The structure of the NPD process has typically been sequential, taking on a stage-gate approach where a decision is made at each stage in this sequence, to either terminate or continue. When evaluating an idea, both quantitative and qualitative tools can be used (ibid). To make these decisions, firms typically compose diverse teams with deep expertise within multiple areas to evaluate different aspects of the product. Diverse teams often generate many conflicting views in the decision making, therefore, it is important to ensure that there is a dynamism within the group that can enable its functionality (Edmondson & Nembhard, 2009). However, if a team was to focus only on certain aspects, such as the uniqueness and the competitive potential of a product, it may result in a sophisticated product. On the other hand, this does not imply that it will turn out to be a profitable business case (Martinsou & Poskela, 2001). When a NPD project becomes too complex for one person handle, the division of labour is necessary to deal with that complexity (Duimering, Ran, Derbentseva & Poile, 2006).

Martinsou and Poskela (2001) stress the need for firms to have knowledge about alternative ideas, customer needs, and the strategic priorities of the firm, to make the best decisions in the NPD process. When acquiring this kind of knowledge, it is important to have a formal process. Song, Wang, and Parry (2010) argue that a formal process for acquiring market information has a positive correlation with new venture performance.
In addition to Martinsou and Poskela’s suggestions for maximising the quality of the NPD process, Schilling (2013) proposes several traditional financial measures pertinent for project evaluation: discounted cash flow, the internal rate of return, and the net present value.

As one of the main objectives of the NPD process is to control development costs, firms may also use a method called capital rationing, where one ranks projects based on forecasted performance relative to a fixed budget (Schilling, 2013). According to Hoyer, Chandy, Dorotic, Krafft and Singh (2010) the success of a NPD process depends on a deep understanding of the customers’ needs, and the intricacies of product development; they argue that traditional market research methods often fail to capture these complexities. Martinsou and Poskela (2001) points out that having an efficient screening process is important to prevent a waste of resources due to overinvestment in concepts with poor business potential.

Concept testing can be considered one of the most critical steps in NPD (Ozer, 1999). Hoyer et al. (2010) argue that focus groups is a technique that can narrow down the product concept, but is expensive and leads to limited customer-firm interactions. In some cases, a prototype can be appropriate to get the proper feedback (Ozer, 1999). It is important to conduct prototype tests early in the development, as doing it too late may have little value in preventing financial losses (Ozer, 1999). Ozer finds the market test stages to be important for the NPD process, and suggests testing in a sealed environment or a small portion of the actual market. There are three types of prototype testing depending on how far in the development the product is. Firstly, alpha testing, where the prototype is tested within the firm to assess whether it delivers its intended performance. Secondly, beta testing, where individuals get to use the prototype for a specified time in their own user environment and report their experiences. Finally, gamma testing, where customers get to use the prototype indefinitely and report issues with the product to enable continuous improvement (ibid).

Hoyer et al. (2010) find that an inability to assess the customers’ needs is often a key reason for new product failure. By involving customers more actively in the NPD process products are more likely to be valued by the customers, thus increase the likelihood of new product success. Hokkanen and Leppänen (2015) argue that front-end activities with a focus on the customers’ needs can explain why certain NPD projects are successful. The degree to which firms interact with specific customers differ between large and small firms, and with it, the value from the interactions. Song, Wang, and Perry (2005) argue that small firms are more
inclined to interact with specific customers than large firms, and found that the knowledge generated via customer interaction has a positive impact on their performance.

3.2 Agile Methodologies

Many firms working with NPD processes are facing turbulent market conditions (Kettunen, 2007). Therefore, methodologies that embrace change as an opportunity, rather than warding against it, are being called for (The Agile Manifesto, 2001). Speed and flexibility have been put forward as the key success factors for organisations to cope with the challenges entailed by shifting market conditions (Kettunen, 2007). Turbulent market conditions have led to an increasing adoption of agile methodologies, as they facilitate speed and flexibility. They do so through short and iterative cycles of development, driven by collaborative decision making and rapid customer feedback (Nerur, Mahapatra & Mangalaraj, 2005). These short and iterative cycles of development lead to continuous and incremental improvements (Blank, 2013).

According to York and Danes (2014), traditional NPD processes have perceived looping back as something negative; caused by running into an obstacle or error that halts the development. However, in agile methodologies, looping back is perceived as positive, as it allows for a positive correction towards a greater product-market fit.

The purpose of agile methodologies is to help firms to quickly develop and iterate their offerings, thereby allowing a dynamic adaptation to current market conditions (Cao, Mohan, Xu, & Ramesh, 2009). This is achieved by communicating with the customers, and adapting the offering to their current needs. It is also important to facilitate communication within the team, by having team members involved in the development, as tacit knowledge cannot be transferred easily (The Agile Manifesto, 2001). Thus, Agile methodologies are evolutionary processes of learning and adaptation, where one’s current assumptions are constantly questioned (Nerur & Balijepally, 2007).

There many different agile methodologies, which all share the goal of maximising the customers value (Kettunen, 2007). Kettunen has identified a trend towards combining and adapting different methodologies, as none of them provide a complete solution for all situations that a firm might face. In their systematic review, Dybå and Dingsøyr (2007) describe some of the more common agile methodologies that are used in software development. The most well-known agile methodology is SCRUM. It is a methodology characterised by typically having
30-day periods of development referred to as “Sprints”, which are evaluated using a “Product Backlog” to manage iterations. Another agile methodology is Lean Development, which focuses on minimising waste by delivering features to the offering in small batches, driven by ideas being “pulled” via customer requests. The authors of this study argue that these methodologies are limited as they focus on how to organise around the development the offering, and does not take the development of the business into consideration. Thus, they do not provide a holistic view.

The purpose of this study is to explore how start-ups approach product-market fit, thus understanding their entire approaches is necessary. To fully understand the approaches start-ups have, methodologies that include a holistic view by including both the development of the offering and the business are required. Agile methodologies that provide a holistic perspective are Design Thinking, and the Lean Startup (Mueller & Thoring, 2012). The main characteristics of these methodologies are what makes them considered agile, as agile methodologies are defined as having iterative processes, allowing for developing and growing over time, while adapting to both the clients’ needs and emergent findings during the development (Paternoster et al., 2014; Stickdorn & Schneider, 2011). As argued by Kettunen (2007), there are no agile methodologies that provide a complete solution, therefore they are often combined. Mueller and Thoring (2012) argue for combining the Lean Startup and Design Thinking, as these complement each other in creating an overview of start-up’s approaches to NPD.

3.2.1 Design Thinking

Traditionally there have been two primary ways of engaging in NPD activities. Either one relies on analytics, logic, and tangible facts which leads to a certain outcome, i.e. an incremental innovation. Or, one relies on heuristics and creativity with a focus on novelty which can lead to more radical innovations (McKelvey & Lassen, 2013). By combining these two schools of thought, Design Thinking provides a holistic approach that aims to provide firms with the tools needed for creating radical innovations in a structured manner (Stickdorn & Schneider, 2011). By using a development process where each step is simultaneous, the firm can maintain this holistic approach throughout the entire development (ibid). Design Thinking begins with integrating what the user or customer find desirable with what is technologically feasible and economically viable (Brown & Kätz, 2009). However, when trying to reach this equilibrium,
all priorities should be made with the primary user or customer in mind (Stickdorn & Schneider, 2011).

(Figure 2. The Design Thinking process, McKelvey and Lassen (2013))

Design Thinking is not a series of steps to be taken in a sequence, but rather clusters of interrelated activities which can be sorted into spaces. A constant iteration between ‘Exploration of the problem space’, and ‘Exploration of the solution space’ is a key aspect to Design Thinking (McKelvey & Lassen, 2013). In the first space, one strives to empathise with the user by collecting knowledge to understand their needs. Once the entirety is understood, one can define the problem and need that should be solved. During this process, several potential needs and problems are identified and then synthesised and if needed, this process repeats itself until the true problem is discovered. In the second space, various potential solutions that strives to fulfil the needs are developed and tested, to establish a product-market fit.

An important aspect of this process is rapid iteration. With the creation of rough prototypes, using minimal effort, time, and investment, the start-up can quickly receive feedback on the proposed solutions, which can be used to refine them through iteration (ibid). Divergent thinking lets a start-up create several potential solutions to the same problem, and by using convergent thinking, it can find the solution with the best potential to be pursued in new
iterations. An iterative approach helps to further explore unexpected findings along the way, to allow new insights that can affect the path (Stickdorn & Schneider, 2011). To create sustainable and holistic offerings, it is important to activate various stakeholders such as employees and customers throughout the whole process (ibid). Stickdorn and Schneider emphasise that one should activate multidisciplinary teams to reach the best result. Kolko (2015) argues that it is especially important to include the employees in the process of observation and evaluation of the customers and their needs. Brown and Kåtz (2009) shares this emphasis on collaboration, and argue that it is important to share work processes, develop and own ideas together in teams, and encourage teams to share and learn from each other. This is supported by Giardino et al. (2016) who argue that all team members should be empowered by autonomy, and that they should be involved in the entire development process.

Five distinct aspects constitute Design Thinking: Empathize, Define, Ideate, Prototype, and Test. Where Empathize, Define, and Ideate can be said to belong in the Exploration of the problem space, and Prototype and Test belong to the Exploration of the solution space. However, in this study, the ideation aspect in Design Thinking is not included, as it is outside the scope of the study. Rather, the scope of this study is the process of gathering and evaluating market information, therefore, ideation will not be a part of the theoretical framework.

3.2.1.1 Empathize

When developing new innovations, one must know that the sum of the parts is greater than the individual parts alone, and that one can only understand the whole by empathizing (Brown & Kåtz, 2009). Dorst (2011) finds that experienced designers can be seen to engage with a novel problem by asking themselves what makes the problem hard to solve. Expert designers do not tend to address a problem head-on, instead they focus on issues surrounding it by getting to know the context. The Hasso Plattner Institute (n.d.) state that there are three primary ways to empathize: Firstly, observation. By observing the user in relevant contexts one can notice discrepancies between what the user says and what the user does. Secondly, interviewing. With open-ended interviews one can uncover the meaning behind the users’ statements. Thirdly, a combination of observation and interviewing - by asking a user to speak their mind while doing a certain task, one can achieve a more holistic understanding. During the empathize stage, one is not clearly positioned in either the problem space or the solution space, with one’s position only being able to be determined retrospectively. By extracting themes from this complex situation, one can gain new insights from the peripheral of the core problem, which can become
triggers for creating new perspectives (Dorst, 2011). Once the designer has found enough clues regarding the problem they can start working toward a solution that addresses the nature of the problem (ibid).

3.2.1.2 Define

A key characteristic of Design Thinking is the ability to frame a problematic situation in new and interesting ways. This is referred to as a way of getting to ‘the problem behind the problem’. To successfully reframe situations is generally associated with higher levels of expertise among designers (Paton & Dorst, 2011). Brown and Kātz (2009) stresses the importance that a frame is constructed which addresses important constraints discovered during empathizing. To best visualise the constraints, Brown and Kātz suggests following three overlapping criteria. Firstly, feasibility, which is that one should consider what is technically possible to incorporate into the idea within a foreseeable future. Secondly, viability, which is the likelihood that the idea will become a part of a sustainable business model, by delivering consistent value to a large enough target market. Thirdly, desirability, which has to do with how much the customers want the solution, and is question of what type of value one should create (ibid). Brown and Kātz argues that an innovation will be successful if there is an equilibrium between these three aspects during the development.

3.2.1.3 Prototype

Prototyping is an important aspect of Design Thinking. It concerns the creation of ‘quick and dirty’ products or services that can be tested, iterated, and refined, which lets firms avoid the risk of spending too much money or time on a new project (Brown & Kātz, 2009). With the help of prototypes, a firm can get reliable feedback quicker than if it would have done ‘thought experiments’ - if an idea has been made tangible it will be easier to test (ibid). Not only can feedback from users or customers be received and understood more easily, it also helps the participants to “Think with their hands” throughout the process, which enhances the overall quality (Brown & Kātz, 2009, p.69).

In Design Thinking, emphasis is put on Rapid Prototyping. Prototypes should be rudimentary, cheap, and fast. Not only will the process be faster and cheaper, while achieving the same results, but two common pitfalls will also be avoided: Firstly, sub-optimal ideas do not become developed too far. Secondly, by becoming too invested in one prototype, new and potentially better ways of solving the problem are discarded (ibid). The goal of creating a prototype is to
learn about the solution’s inherent advantages and disadvantages, which then are used to iterate and refine the idea (McKelvey & Lassen, 2013). Prototyping brings with it a counterintuitive realisation: the more complete a prototype is, the less value it will return to its creator in terms of constructive feedback (Brown & Kätz, 2009). However, Smith and Ulrich (2001) argue that a challenge with prototyping is to develop a product concept that is clear enough to get meaningful feedback.

Prototyping is a powerful tool that can help its creators to make ideas tangible, and refine them. They can easily be tested and developed in-house, and traditional market testing approaches such as focus groups can be invited to further test them. However, keeping the development behind closed doors will only generate a finite number of insights; it is only in the interaction with real users or customers that it can tested accurately, which is refered to as “Prototyping in the wild” (Brown & Kätz, 2009, p.74). To launch a prototype onto the market makes so that it can be tested more thoroughly. Brown and Kätz argues that this is especially important when developing services, as they often rely on complex social interactions that cannot be replicated in-house.

3.2.1.4 Test

Once a prototype has been constructed, it needs to be tested to ensure that it fulfils its purpose. When conducting a test, it is important to have a clear understanding of what it is that should be tested. Geehr (2010) argues that before each test is conducted, a clear variable to test should be identified. To find the cause and effect is a major aspect in the testing of a prototype, if too many variables are included within a test it risks losing its predictive power. Before each test, assumptions, or questions, that are key to the specific prototype should be posed so that they can be analysed accurately (Ingle, 2013; Geehr, 2010). However, Design Thinking is not “Hypothesis Driven” (Mueller & Thoring, 2012). Rather, these questions are qualitative in their nature, and strives to achieve a human-centred focus where the user and the problem are key (Koen, 2015).

Organisations that use Design Thinking in their innovation processes go through many alterations of their prototypes. To ensure that the right data is available in the decision-making process for the next iteration, the firm needs to keep track of key metrics (Ingle, 2013), i.e. it needs to set up a feedback loop. During, and in the end of each testing phase, feedback should be gathered and analysed with the needs of the user in focus. This data should then be
synthesised into a new generation of the prototype, which ultimately results in a new testing phase that aims to bring the solution one step closer to solving the user or customers’ need (Ronsen, 2016; Collias, 2014).

3.2.1.5 Evaluate

Brown and Kātz (2009) stresses the need to make ideas tangible so that they can be evaluated faster, to zero in on the best solution. Three tools for maximising learning from qualitative testing are: ‘Feedback Capture Grid’, ‘I Like, I Wish, What If’, and ‘Sharing Inspiring User Stories’ (The Interaction Design Foundation, 2017). The Feedback Capture Grid can be used to capture responses that are categorised as likes, criticism, questions, or ideas. With the Feedback Capture Grid, the interviewer can continuously evaluate an ongoing interview, and steer the conversation towards topics receiving less input. I Like, I Wish, What If is a way to collect test feedback by encouraging the respondent to reply using these three statements. This allows for data that highlights positive aspects, room for improvements, as well as suggestions outside the current test. Sharing Inspiring Stories is a way of taking a couple of interesting observations of users and map them out in high detail. By doing so, it is possible to find similarities and draw insights between stories, which helps the team to identify new ideas and feelings to work on, when thinking about new solutions (ibid).

Ingle (2013) suggests that teams should evaluate each issue in relevance to the larger environment that surrounds it. This allows the team to identify which issues in their operations that are caused by external influences. Furthermore, it lets them evaluate how external influences could affect their operations. Moreover, Ingle argues that start-ups should create feedback loops that enables customers and employees to continuously share insights, opinions, and criticism. Ingle also suggests using a tool called ‘Impact and Effort Matrix’: by positioning perceived issues, opportunities, or challenges in a matrix consisting of the axes of impact and effort, it becomes clear how to prioritise. For example, if an opportunity is scored high on impact and low on effort, it should be prioritised (ibid).

3.2.2 The Lean Startup

The Lean Startup is an approach to build and scale new businesses, proposed by Ries (2011). It is based upon his mentor’s, Steve Blank, work on customer development combined with the lean principles used by Toyota production systems (York & Danes, 2014). The methodology
is designed to reduce the risks associated with new ventures, by having an iterative process of product development and feedback gathering from the customers. This allows for the adjustment of the offering to fit with customer demand, or alternatively to fail fast to minimise sunk costs.

The Lean Startup methodology states that one first needs to find a problem-solution fit (Hokkanen & Leppänen, 2015). A problem-solution fit is when there is an indication that an identified problem can be solved by a particular solution, and that it has a business potential (Hokkanen, Kuusinen, & Väänänen, 2016). To identify a problem-solution fit, software start-ups need to discover the real needs of their customers, which can be done by testing speculations by only using a minimal set of functional requirements (Paternoster et al., 2014). After the problem-solution fit has been found, one needs to find the product-market fit (Hokkanen & Leppänen, 2015). The product-market fit is a state when there is a willingness to pay for the firm's offering, there is an economically viable way of acquiring customers, and the market is large enough to sustain the business (Thoring & Mueller, 2011).

The core principle of the Lean Startup process is the Build-Measure-Learn feedback loop (Ries, 2011). The feedback loop is the most crucial part of this principle, as it depicts the iterative process that permeate the Lean Startup and agile methodologies. Each time something has been confirmed as validated learning the process will repeat, leading to new validated learning (Trimi & Berbegal-Mirabent, 2012).

3.2.3.1 Build

The first step of the Lean Startup process is Build, and concerns the gathering data, that is to be used as evidence in decision making (Ries, 2011). However, what type of data to gather varies depend on how far into development the idea is. For each idea, there are critical assumptions that the success of the idea rests upon. To get answers to whether these assumptions are true or false, start-ups needs to formulate hypotheses that can be tested through experiments (ibid). Ries argues for a scientific approach where setting up hypotheses before conducting experiments is crucial, as it will let the start-up determine cause and effect more easily.

There are two types of hypotheses: the value hypothesis and the growth hypothesis. The Value hypothesis concerns whether the offering delivers value to the customers. The growth
hypothesis concerns how new customers will discover the offering, and how the venture can grow. Once a hypothesis has been formalised, the start-up needs to design experiments to achieve validated learning. These experiments are conducted by constructing what Ries (2011) refers to as a Minimum Viable Product (MVP). A MVP is a form of experiment that constitutes the minimal amount of effort and time required to enable the Build-Measure-Learn feedback loop. However, the minimal amount of effort and time might be subjective, and vary depending on what it is that should be tested. The spectra of MVPs stretches from simple mock-ups to highly functional versions of the offering. Unlike traditional prototypes or concept tests, the experiments are not constructed to only answer questions regarding product design or technical questions, but to test fundamental business hypotheses (ibid). Ries also claims that common market research and evaluation tools, such as surveying, are inadequate to complete the Build-Measure-Learn feedback loop, as respondents often fail to assess their feelings objectively.

With the help of a MVP, customers can provide the start-up with objective data that would otherwise be hard to collect, and increasing the customers’ understanding about how well it serves their needs. Feedback can be collected through direct interaction with the customer, or through behavioural data captured by the MVP. Trimi and Berbegal-Miraben (2012) support having early interaction with customers, as it increases the chances for start-ups to succeed, without having to rely on large amounts of outside funding. Ries (2011) argues for the need to get a MVP in front of the customer to see their reactions, and sometimes even try to sell the MVP.

Examples of characteristic MVPs mentioned in the Lean Startup are: Smoke Tests, Wizard of Oz, and Concierge MVP. Smoke Tests can be conducted in several ways. The objective is to find out how interested the customers are in product, and is achieved by having them leave a commitment, such as an e-mail address or credit card information (Ries, 2011). The most common form of Smoke Testing is using a landing page, according to Toivonen (2015). A Wizard of Oz MVP is when customers are made to believe that they are interacting with the actual product (Ries, 2011). However, instead of the product carrying out the job, it is manually done by someone behind the scene, thus creating the illusion that there is a functional product. The Wizard of Oz allows one to test out promising concepts by spending time, rather than money. Just like the Wizard of Oz, a concierge MVP involves someone performing the service manually, but without creating an illusion. This can generate early feedback and learning about the customers’ needs before significant resources are committed (ibid). To figure out if a design is effective, Ries (2011) suggests using A/B testing. By running two designs of the MVP in
parallel, a start-up can gather data on how customers responded to each of the versions. Furthermore, this allows for small-scale experiments, such as measuring the impact of minor alterations, so that the offering can be optimised.

3.2.2.2 Measure

A key activity in the Lean Startup is to determine whether the development is progressing or not. To track performance and progress in development, it is important that the same metrics are used over time (Ries, 2011). It is important to define what outcome of an experiment that leads to an accepted and rejected hypothesis, referred to as having a “line in the sand” (Croll & Yoskovitz, 2013). Croll and Yoskovitz acknowledge that drawing a line in the sand is difficult for start-ups, and suggest that one should try to find an industry baseline to benchmark against, or to find out what is needed to run a sustainable business. Ries (2011) argues that measuring the progress in the development of the offering should not be done with traditional financial metrics, instead, one should use metrics tied directly to the offering. Croll and Yoskovitz (2013) backs this claim, and argue that firms risk to prematurely kill off new innovations if they use financial metrics.

All software start-ups face the challenge of having to balance multiple of activities simultaneously (Ries, 2011). Despite managing multiple activities simultaneously, Croll and Yoskovitz (2013) argue that it is important to have a primary focus. The focus should change depending on what stage of development the start-ups currently is in. To successfully do so, one needs to single out the most important metric, which is referred to as the ‘one-metric-that-matters’ (OMTM) (ibid).

This metric should capture the big picture, and reflect the most important question at the time that needs to be answered. If the OMTM is tracked, it helps the software start-up avoid getting caught in the sea of lesser problems it naturally faces. Furthermore, an OMTM helps to align all team members towards one goal, and inspire a culture of experimentation (ibid). However, Toivonen (2015) argues that while having a strategically aligned goal increases efficiency, it shifts the development focus from radical to incremental innovation. Furthermore, having an OMTM gives the software start-up directions towards which assumptions to test, and draw a line in the sand (Croll & Yoskovitz, 2013).
3.2.2.3 Learn

Learning is an inevitable outcome of conducting and analysing experiments. Whether a hypothesis is accepted or rejected, the outcome is always ‘Validated Learning’ (Ries, 2011). With this new knowledge, the software start-up is put in a position of either persevering or pivoting the idea. If the hypothesis is rejected one can pivot, meaning that one alters the strategy in a way that still leverages the resources gained during the development (Fagerholm et al, 2014). If the hypothesis is accepted, the start-up should persevere, i.e. stick to the strategy of continuously optimising and developing the offering. In both cases of pivot and persevere, the software start-up must continue to test further assumptions that critical to its success (ibid).

To understand how different customers react to changes in the offering, Ries (2011) suggests using a cohort analysis. A cohort analysis is the comparison of subjects who have one or more defining characteristics in common. This can for example be used to determine the behaviour within the offering between a new customer and an existing one. A cohort analysis can also be used to gain deeper insights from A/B tests, as it can determine a specific customer groups’ reaction to changes in the offering. Furthermore, he argues that cohort analysis enables the evaluation of relative performance between different iterations over time. Ries argues that to maximise the learning from each test, one should set up a multidisciplinary team that work together towards learning milestones; he argues that this will result in the software start-up learning faster, than if everybody would work individually in their respective department.
4. Establishing the conceptual model

In the fourth chapter the reader is acquainted with the study’s conceptual model, which combines the characteristics of the Lean Startup and Design Thinking. At first, the two agile methodologies are compared to identify where they overlap and complement each other. Then, the two methodologies are merged into a conceptual model, and its components are described.

4.1 Comparing Design Thinking & the Lean Startup

Design Thinking and the Lean Startup share many characteristics, but also have a few differences. Mueller and Thoring (2012) argue that the two methodologies are highly complementary, and that they together provide a holistic view of innovations strategies. A shared characteristic of the methodologies their iterative process structure; emphasising the importance of having short feedback loops by involving customer and users (Ries, 2011; Brown & Katz, 2009; Mueller & Thoring, 2012). The objective of both methodologies is to facilitate the development of innovations. To have a strong customer and user-centric mindset enables the development of solutions that solve the recipients’ problems. The involvement of stakeholders and team members throughout the development, is crucial in both methodologies.

To gather feedback and insights on how recipients react to a proposed solution to their problem, both methodologies rely on testing. When conducting tests, Design Thinking primarily advocates qualitative research tools, whereas the Lean Startup primarily advocates quantitative. Both methodologies argue that one should assess the customers and users’ problems early in the process. In Design Thinking, one initially focuses on the users’ problems and needs by empathizing (Brown & Katz, 2009). However, in the Lean Startup, one assesses problems by searching for a problem-solution fit; incorporating both the customer value and the possible business potential simultaneously (Hokkanen et al., 2016).

The Lean Startup describes the value hypothesis and the growth hypothesis, which are like Design Thinking’s aspects of desirability and viability. Both definitions represent a focus on broadly the same aspects, namely the customer value creation side of a venture, and the business side of the venture. Desirability and viability are perceived by the authors of this study to provide a holistic perspective of these two sides. Therefore, they were chosen to represent
these aspects in the conceptual model. However, the two methodologies differ regarding what start-ups should focus on when developing their offerings. Design Thinking argues that there should be an equilibrium between desirability and viability. Thus, start-ups should have an equal focus on these perspectives (Brown & Katz, 2009). However, the Lean Startup argues that start-ups should have a primary focus at any given point in time, which then shifts depending on the stage of the development. This primary focus translates into the OMTM, which all activities should strive to optimise (Croll & Yoskovitz, 2013). When it comes to learning about the customers’ needs, both methodologies focus on using different types of tests or experiments to gather information. Design Thinking does this by building rough prototypes to test new concepts (McKelvey & Lassen, 2013). Whereas the Lean Startup does this by building MVPs, using a minimal set of requirements for the proposed solution to fulfil its purpose (Paternoster et al., 2014). Compared to Design Thinking the Lean Startup advocates a more scientific approach, where hypotheses are accepted or rejected depending on the outcome of the test - by doing so the Lean Startup turns testing into experimentation.

Presented below is a table that shows the key characteristics of the Lean Startup and Design Thinking, and functions as a foundation for the establishment of the conceptual model.

<table>
<thead>
<tr>
<th>Aspect</th>
<th>Design Thinking</th>
<th>The Lean Startup</th>
</tr>
</thead>
<tbody>
<tr>
<td>Process structure</td>
<td>Iterative</td>
<td>Iterative</td>
</tr>
<tr>
<td>Objective</td>
<td>Innovation</td>
<td>Innovation</td>
</tr>
<tr>
<td>Stakeholder and team member involvement</td>
<td>Focus</td>
<td>Focus</td>
</tr>
<tr>
<td>Main research method</td>
<td>Qualitative</td>
<td>Quantitative</td>
</tr>
<tr>
<td>Assessing potential</td>
<td>By empathizing</td>
<td>By identifying a problem-solution fit</td>
</tr>
<tr>
<td>Venture focus</td>
<td>Equilibrium between desirability and viability.</td>
<td>Main focus on either value or growth, depending on the ventures stage.</td>
</tr>
<tr>
<td>Testing</td>
<td>Focus</td>
<td>Focus</td>
</tr>
<tr>
<td>Prototype</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>Hypothesis testing</td>
<td>Not a focus</td>
<td>Focus</td>
</tr>
</tbody>
</table>
4.2 The conceptual model

The conceptual model describes the shared characteristics Design Thinking and the Lean Startup by breaking them into their shared elements: Prepare, Execute, and Evaluate. It builds upon the shared iterative process structure of the two methodologies, and incorporates the all their elements: namely, Empathize, Define, Prototype, and Test from Design Thinking, as well as the elements Build, Measure, and Learn from the Lean Startup.

(Figure 3. The Conceptual Model. Authors’ creation)

4.2.1 Prepare

The prepare stage is concerned with what software start-ups seek to learn. The purpose might be to empathize, to better understand customers’ needs and problems. Empathy can help software start-ups identify new areas of improvement and issues that otherwise might have been overseen. If one already has identified a possible solution to a need, this stage will instead focus on the preparation of a test or experiment. This includes the motivations behind tests, such as if the software start-up seeks to find out what is desirable from the customers’ perspective, or if it is a viable business case. If a software start-up seeks to conduct an experiment, it must identify a question that can be constructed into a hypothesis, so that cause and effect can be determined. Depending on what the hypothesis is, the software start-up must define which metrics to keep track of, for the experiment to generate relevant feedback. To remove the need for excessive post-test evaluation, a start-up using experimentation should define a line in the sand in the preparation stage, which will determine when a hypothesis is to be accepted or rejected.
4.2.2 Execute
The execute stage is concerned with how software start-ups conduct tests to gather information related to its purpose. This includes several types of tools which generate qualitative feedback and quantitative feedback. Some of the tools can generate both qualitative and quantitative feedback, and it depends on design of the test; while other tools are predisposed to generate a specific type of feedback. However, most of the tests can be designed to capture the two types of data, and could therefore serve any given purpose. Tools commonly used stretches from simple MVPs to more complex, such as prototyping. Many of the proposed tools do not require any extensive development to fulfil their purpose. The conceptual model stresses the importance of including stakeholders and team members in this process, as it ensures that the development is in line with customer requirements, and that all team members are aligned.

4.2.3 Evaluate
The final stage is to evaluate the test or experiment; it is often where most of the learning takes place in the process. The tools used for evaluating an outcome of an idea may differ, depending on what type of feedback that the test have generated. Qualitative evaluating of feedback is concerned with how the feedback is structured; this is to create an overview where participants in the evaluation process can discuss and draw parallels between characteristics within the feedback. The quantitative evaluation often relies on statistical analysis. Everyone within the team should be involved in the evaluation process, as this contributes to more perspectives as well as it gives the team a shared understanding of the current situation. The inclusion of team members in the evaluation ensures that everyone is aligned towards the same goal.
5. Empirical Material

This chapter will present the material gathered from the interviews with the cases. Each case is presented separately, and their distinguishing characteristics are summarised. Appendix 8.1, 8.2, and 8.3 combined contain an overview of each respondents’ actions and characteristics.

5.1 Start-ups from Gothenburg

5.1.1 RaceONE

RaceONE is a business-to-consumer-to-business venture founded in 2015. The venture has business customers, but the primary customers, and the users, are consumers. The main offering is live tracking of athletes during endurance races, and is a market-knowledge innovation. RaceONE has been incubated, and has received seed capital. The offering is new to the market.

In its approach to reach product-market fit, RaceONE has primarily used qualitative tools. The respondent stated that they at first carried out open-ended interviews with athletes, and spectators, at larger races so that they could empathise with their problems and needs. A paper prototype was shown to the potential users so that RaceONE could receive concrete feedback. The respondent expressed that prototyping is a vital part in the venture’s operations to increase the product-market fit, as it generates feedback that lets them understand their customers and users better. Creating prototypes that require the least amount of effort, and which can ensure a short feedback loop was emphasised.

Over time, RaceONE has moved away from using paper prototypes to launching a gamma prototype to its users. Within the live version of the prototype, RaceONE does Wizard of Oz MVPs, and small and continuous iterations to the offering. Interviewing has been used by the venture both to gauge the interest for new iterations, and to evaluate those that have been launched, and the respondent expressed that they have for the most part used semi-structured interviews. In addition to semi-structured interviews, the respondent expressed that they rely greatly on open-ended interviews.
The respondent stated that they have carried out face-to-face sales meetings with organisers continuously as a way to test their offering and discover new opportunities. The rationale for this is that it lets RaceONE quickly get an understanding for areas in which they have lacking insight; it also lets them test the traction of new features before they are built, as they can “sell” features that do not exist. The respondent expressed this with the words: “As soon as we had new areas where we didn’t know our way, we tried to find methods to find out. Whether it was surveys or being out at a race. It was a bit of interviewing and sales with the organisers in the beginning. Selling functions, we didn’t really have.”

Regarding interviews, the respondent argued that one should listen to what the customer says, but that one need to keep in mind which segment it is that says what, as they often contradict each other. Moreover, she emphasised product vision; that one needs to sift through the feedback to see what it is that is relevant. Before any interview or test is carried out, RaceONE formulates a hypothesis, and a line in the sand for when to accept or reject that hypothesis. The respondent argued that they do not do general tests and just sees what happens, rather, they always have a predefined purpose, and the respondent expressed it as: “It’s not just that we do a generic thing that we send out and then analyse, but it is to get an answer to a question.”.

Regarding exploring the viability of the venture, the respondent stated that they initially did benchmarking and surveys. By comparing themselves to the same type of firms in other industries, they could decide for an income model, and price level. However, the respondent argued that it has led to some difficulties, as the industry standards are not completely applicable to their situation. This has resulted in that RaceONE now tests various income models and price levels. Another tool used by RaceONE is that of surveying, as a way to complement their qualitative data. The respondent stated that they have used surveys continuously, and have primarily done so to evaluate new iterations of the offering. Moreover, the venture gets quantitative data from the use of its offering, and was expressed as an extra important source of feedback.

The respondent stated that there are three primary metrics being tracked at the moment: sales, in-app activity, and the number of followers per active user. Most of RaceONE’s metrics are related to the product. To gain insights about which customer group to focus on, RaceONE uses cohort analysis to divide users into groups depending on how new they are to the platform.
Employee participation in the product development is an integral part at the venture. The respondent explained that most the employees are participating in many of the interactions they have with users and customers; in the cases when they are not participating insights are actively shared with them on a regular basis, and through occasional workshops. The rationale for including employees is to establish a shared goal and vision to work towards, which the respondent expressed as: “Everyone who works knows what the targets are. Everything we do should grow those metrics.”.

Distinguishing characteristics of RaceONE:
- Has an approach similar to the conceptual model, with a focus on meticulous testing,
- Emphasis on precision,
- Balanced focus on viability and desirability,
- High level of team involvement,
- Balance between qualitative and quantitative tools,
- Used paper prototyping and a Wizard of Oz MVP for concept testing,

5.1.2 Precisely

Precisely is a business-to-business venture founded in 2013. The offering is a contract management platform aimed towards business lawyers in medium-large sized firms, and is a market-knowledge innovation. The innovation is new to the market.

In the approach to reach product-market fit Precisely has used both qualitative and quantitative tools. Early on, the venture launched a beta prototype that was used to test iterations of the offering and new value propositions. Surveying was also used as a tool to ask users about what new features they wanted, but the respondent stated that surveying had not been used extensively. Instead, the respondent expressed that the live version of the offering has continuously been tested and refined, and that it now has transitioned to be a gamma prototype. However, he stated that they do not use dedicated prototypes to test new iterations of the offering any longer. Rather, all new iterations are now driven by sales meetings with existing and potential customers, and unsolicited feedback that they receive at industry fairs and similar activities. The respondent stated that the only way to know if an iteration or a test is successful or not, is if it is purchased by the customer and the venture can make money on it, which the respondent expressed as: “Some people say that they have proven this and that already after a
year. (…). You have proved something when you can make money.”. He argued that extensive testing is good in theory, but cannot be done in real life, as start-ups’ scarce resources only permit them to find indications, and not evidence that can validate their assumptions. Rather, the respondent argued that selling is more important - to meet those that will pay for the offering face-to-face. The respondent expressed that the result of this is that data is not used in the decision making regarding the development of the offering. The respondent argued that the data from their gamma prototype could be used to increase the product-market fit, but that their focus as of now is to increase the revenue, to attract investors. The respondent argued that it is important to show that there is a ‘real’ proof of concept, i.e. that one can show that there is a working business model, and not only users who do not pay.

Regarding Precisely’s business model and price level, the respondent expressed that they have benchmarked themselves to similar firms, and then set a higher price than the average. The respondent argued that many charge too little for their services, and that it is harder to raise the price than to lower it. Instead of collecting feedback to use for developing the offering, the respondent expressed that A/B testing was used for marketing purposes, i.e., to test value propositions. In combination with using cohort analysis, Precisely was able to determine which value propositions that were most attractive to different segments of users. Cohort analysis has also been used in the product development efforts to understand different customer groups’ behaviour. The respondent expressed that all decisions cannot, and should not, be entirely based on quantitative data, and illustrated this with an example: Precisely’s data from the beta prototype suggested that a feature should be removed. But, according to the respondent, the problem was not the feature in itself. Rather, the customer segment at the time was considered to be wrong. After acquiring new customers that fit the desired segment, quantitative data showed that the feature should be kept. The respondent expressed that it is therefore important to have a clear idea of what one’s assumptions are before doing any tests or changes to the offering.

The respondent stated that they as of now have paused the process of trying to reach product-market fit, and instead focus on activities that will increase the revenue in the short term, as they are actively seeking new external financing. He argued that investors are not interested in the number of users a venture has, or what the users do on the platform, but are instead interested in the financial sides of the venture. The respondent discussed their two primary metrics: monthly recurring revenue, and churn. He argued that they have not been permanent,
rather, they have changed over time, along with the development of the venture, and that this financial focus is temporary. The respondent expressed that they do not yet know which in-app metrics that are the top contributors to customer conversion, and that they are looking for them.

The respondent stated that only certain members of the team go out to meet with potential customers and users. However, once a week the whole team meets up to share new insights that are used to determine the focus of the coming development sprint. During these meetings, all decisions are taken with the customer in mind, and the change’s impact in relation to the effort of developing it. The respondent expressed that the customers’ needs should be in focus when evaluating and that it is hard to know if something will work a priori, and said it with the words: “What’s important when it all comes around is what value it has for the customer. When the customers validate and are willing to pay more, then we know that it is the right thing”. Sharing insights was considered by the respondent to be important, so that they can create an understanding across the organisation for the customers’ needs and problems, so that they could avoid developing features which are not anchored with the customers.

Precisely has an approach to reaching product-market fit that is largely based on testing. At first, testing in the form of prototypes was primarily used, but over time, a greater emphasis was put on sales meetings and qualitative feedback. Initially, Precisely focused on developing the desirability of the offering, but with time, Precisely’s primary focus has transitioned towards increasing the viability of it.

Distinguishing characteristics of Precisely:
- Initially followed parts of the conceptual model by focusing on testing to gather feedback for iterations, but shifted development towards being driven by unsolicited feedback from stakeholders,
- Argues that start-ups cannot validate via testing, as they do not have the resources to find evidence, but only find indications,
- Argues that validation only can come from actual sales, and not non-financial measures,
- Precisely has shifted from desirability to viability, because of a strategic shift.
5.1.3 Adfenix

Adfenix is a business-to-business venture that was founded in 2014. The primary offering is a platform that lets real estate agents create advertisements for listings which are highly tailored to specific individuals, across multiple social media channels. Adfenix’s offering is a market-knowledge innovation. The innovation is new to the industry.

When he started out, the founder of Adfenix developed a paper prototype which was used in sales meetings with prospective partners and customers. Initially, Adfenix worked with one big housing platform. The respondent stated that after such a partner had been found, they began to develop the offering together. In time, the partner’s interest waned off, and the respondent expressed that they then had to pivot, and carried out sales meetings with real estate agents to gauge their interest for Adfenix’s new suggested offering. The respondent expressed that their business model is decided by the conditions of the market; that framework agreements is the norm within the industry Adfenix is targeting. Furthermore, he argued that it is better to have a low price, than a high price or give the offering away for free, as it gets customers committed but does not provide any barriers-to-entry for them.

Validation through sales meetings has been a consistent theme for Adfenix. The respondent expressed that sales meetings are better than interviews if they are carried out in the right way, as they will provide the information needed, and show if the customer really is interested in the feature or offering, and expressed it as: “No, [no interviews] but a sales process where we have a couple of questions that must be answered (...). the sale is very similar if you do it well.” “...if we get someone to purchase we consider it to be a successful test and do the same thing again”. However, the respondent emphasised that one must prioritise the product vision and refrain from listening too much to users and customers, as it risks leading the development in the wrong direction. According to the respondent, feedback on a new iteration can come from two directions: Firstly, through meetings with prospective customers. Secondly, through the support function from existing customers. He argued that this intimate contact with the customers form the foundation for their iterations of the offering.

When carrying out these sales meetings, the respondent expressed that they have some assumptions that they want to test out. However, the respondent expressed that no clearly defined hypotheses have been formalised before carrying out those meetings. Neither does
Adfenix define a clear line in the sand. The respondent argued that there is not enough time in a start-up to spend on defining a hypothesis, or a line in the sand prior to testing, and that creating arbitrary ones is counterproductive for start-ups, and that they are more suitable for large organisations, and he expressed it as: “It is very complex to set up such criteria that have value. I could set up something arbitrary, but that will not add anything, then it is easier to go on going. But the larger the organisation, the more defined structures need to be in place”. Instead, one should spend time with the customer.

The respondent stated that the venture’s OMTM is the percentage of real estate agents that order one or more ads per month. The rationale for the chosen key metric is that it drives the offering’s value, and generates revenue. The respondent also stated that this metric is difficult to influence directly, and that it is rather a combination of ten underlying metrics. By creating a funnel with the metrics, Adfenix can track the behaviour of the users and do changes where necessary. However, the venture’s primary focus regarding metrics are on the financial side. To affect their OMTM, the respondent argued that it is important to create a unified vision. Therefore, Adfenix’s OMTM is shared with the whole team once a month. In addition to this monthly meeting, the respondent stated that all feedback is analysed during a bi-weekly meeting where the top-management team and the relevant team for the specific issue take part.

All potential changes to the offering are then evaluated using an impact-effort analysis. The respondent stated that during these meetings, the feedback is discussed and prioritised depending on the fit with the product vision, and ease of development. When doing this type of reasoning, the respondent argued that 60% comes from the product vision, and 40% from customer feedback. He argued that it is better to go with one’s gut feeling and stay true to the product vision, and if an iteration is not successful, the customer usually has suggestions on how to improve it. The respondent stated that it is important to understand the true need of the customer, and not blindly go after each suggestion or indication that one finds.

All in all, Adfenix has had an ad hoc approach that is heavily influenced by sales meetings. Both qualitative and quantitative data are gathered through the operations of the venture. The primary focus of Adfenix’s approach has been to increase the offering’s viability.

Distinguishing characteristics of Adfenix:
- High focus on viability, and has a strong focus on financial performance measures.
- Use unsolicited feedback together with feedback from sales meetings to drive the development,
- Argues that sales is better than qualitative tools, as it provides both feedback and actual customers,
- Has a strong product vision and spends time on developing the offering rather than spending time on collecting feedback,
- Argues that formal structures are more suited for large organisations, and that startups should focus on acting,
- Used paper prototype for concept testing.

5.1.4 Equilab

Equilab is a business-to-consumer venture founded in 2016. The offering is a service that lets horse riders measure and track the performance of their horses across various disciplines so that their performance can be optimised. The venture’s offering is a market-knowledge innovation. Equilab has been incubated. The innovation is new to the world.

At first, Equilab took on a research-based approach, and used surveys to gauge the interest for the offering so that they could get empathy for the users’ problems and needs. However, only a limited amount of surveys was carried out, as the respondent expressed that it was an inefficient tool due to low response rates. Soon after, Equilab began to use both qualitative and quantitative tools to evaluate the current offering and find new ways to increase the product-market fit.

Semi-structured and open-ended interviews have been conducted extensively, and the respondent stated that they have used interviews to evaluate new features in the offering and to discover new possibilities. The respondent argued that interviews is a good way to understand patterns in the quantitative data generated from their prototypes, and vice versa; the respondent expressed it with the words: “We have a lot of data, really, so we complement it with interviews (...) We often find things in the data, so we must know what the riders are saying”. Equilab tests prototypes in three stages. Firstly, internally to ensure usability. Secondly, a beta test with a group of core users that have agreed to test new features, so that they can get in-depth
feedback. Thirdly, if the new feature is deemed good enough in the beta test, a gamma test where all users can test the new feature is initiated where Equilab can track quantitative data.

The respondent expressed that for uncertainties regarding the offering, or when a new feature is to be tested, Equilab has continuously developed clearly defined hypotheses. When testing their hypotheses, the respondent argued that they do not formalise a line in the sand, as reality is often more complex than theory. He argued that when they do a change to the offering, they do not know why people do what they do, and who that would have carried out the preferred action despite the change. According to the respondent, the difficulty of finding cause and effect makes it hard to have a predetermined threshold for the acceptance or rejection of a hypothesis.

The OMTM expressed by the respondent is retention, and that it has changed over time, and that it will change again soon, as the venture goes from one stage in its development to another. Furthermore, he stated that all current efforts are aimed towards improving that metric. Moreover, he explained that their key metric is constructed with several underlying metrics that are all connected. Tracking user behaviour within the service with the help of several metrics is expressed as an integral part of their information gathering process. By tracking the users’ behaviour within the service with several metrics, the respondent argued that they can create a funnel depicting the users’ journey through it, and insights from that data can help to optimise the offering.

Equilab has a strong focus on measuring quantitative data for its offering, which was expressed by the respondent as: “Everything one adds [new features], we should be able to measure. (...) you must always be able to measure things, otherwise there is no real benefit”. To decide which changes to make permanent in the offering, the respondent expressed that they often rely on A/B testing. However, understanding the implications of the raw data can be difficult, and the respondent expressed that all the metrics which are tracked are shared with all the members of the team, and that they are continuously discussed to understand what they mean and how they can be changed.

The respondent expressed that they iteratively go between qualitative and quantitative data to triangulate and pinpoint issues. If patterns are discovered in a statistical analysis, it is further investigated qualitatively to find the explanation behind the phenomenon, and vice versa. The
respondent also expressed that virtually the whole team is meeting with the users so that they can establish an understanding for the users’ needs across the whole organisation. However, he stated that they no longer meet with the users to the same degree, as they do not have the time. Instead, they have a few selected team members that actively meet with users, and then provide the rest of the team with their insights.

Even though Equilab collects a great amount of data from qualitative and quantitative sources, the respondent expressed that their prioritisation for new iterations is not always based on it, but that the prioritisation sometimes is done to align the offering with their vision. In these decisions, Equilab weigh the expected impact to the effort of making it happen.

Distinguishing characteristics of Equilab:

- Has a strong focus on the execution of tests,
- Focuses on desirability,
- Uses both qualitative and quantitative tools - triangulates data to pinpoint issues,
- Follows core agile principles with high stakeholder involvement and iterative development,
- Argues that reality is too complex to follow best practice,

5.1.5 Bonsai

Bonsai is a business-to-business venture founded in 2015. The offering is an on-demand job platform that connects firms - the customers - with university students - the users. Through the offering, firms can get personnel to carry out lesser tasks. The venture’s offering is a market-knowledge innovation. Bonsai has been incubated, and has received one round of external financing. The innovation is new to the market.

Bonsai has gone back and forth between using qualitative and quantitative tools in its approach to reach product-market fit. The respondent stated that they at first sent out a few surveys to do market research. However, he argued that surveying is an inefficient tool to gather data, due to often low response rates and its inherent ambiguity; knowing whether the respondents dislike the idea, or simply has a busy schedule, is regarded as impossible. Instead of surveying, Bonsai turned to rely heavily on carrying out open-ended interviews with the customers to empathize. The respondent expressed that interviewing was a difficult approach, as the interviews had to
be catered to the unique context of each potential customer, considering that Bonsai started out with talking to independent entrepreneurs as well as corporations. Open-ended interviews were also carried out with the users. However, the respondent stated that they spent only a few days talking to potential users, and asked them to sign up for the service, to gauge the interest for the idea among the users. The respondent stated that rationale for relying heavily on interviewing is twofold: Firstly, to test one’s hypotheses. Secondly, to discover new opportunities. He also stated that interviewing is more efficient than engaging in sales meetings with potential customers, as the ones being interviewed are more open and will share more information, and expressed it as: “They [interviews] were easy to get as we didn’t sell anything, but said that we needed their opinion. People like to share their opinions on things”.

Over time, Bonsai has transitioned to carry out more and more quantitative testing, and forgoing interviews. Before committing resources to development, Bonsai tested out a Concierge MVP. The respondent explained that a group of users were managed through a social media platform, and that all contact with the customer was done through e-mail and over telephone. In time, a gamma prototype was launched, and gradually more and more customers and users were included in the testing. As of now, new features, and changes to existing ones, are always tested live via A/B testing. The respondent argued that by doing so, they save time and money as nothing is developed too far in vain.

Regarding Bonsai’s pricing, they have in large been determined through benchmarking. The respondent stated that they looked at what the costs for recruitment was, and then took out a price similar to that, but that still would let them cover their costs. Furthermore, the respondent expressed that their business model - charging per hour worked - is a natural result of their offering.

When conducting tests, Bonsai works diligently with setting up hypotheses. Both for qualitative and quantitative tests hypotheses, and with a clear line in the sand for being discarded or accepted are formed on a continuous basis; the respondent expressed this with: “We’ve always had the default attitude to formulate a hypothesis, and verify it, and do it by talking to the market – not build too much and test when everything is done”. The respondent stated that they typically do these tests during two-week sprints, and track data on the usage of the service to determine its appeal to users and customers. The respondent discussed multiple metrics that are tracked regarding the offering, and the business side of the venture. However,
Bonsai’s focus is on metrics relating to the offering. Bonsai’s metrics were primarily focused on the offering. The respondent stated that they track the users and customers’ behaviour with several related metrics to create a funnel that lets them pinpoint cause and effect. The respondent expressed that their OMTM is the activity level of the customers, and explained that their bottleneck to achieve growth is connected to that metric. In the beginning, all team members were active in all the tests, but the respondent stated that as time moved on, the roles of each member became more defined and specialised.

Distinguishing characteristics of Bonsai:

- Has an approach similar to the conceptual model, with a focus on meticulous testing,
- Emphasises feedback loops and short development cycles to verify or discard hypotheses,
- Follows core agile principles with high stakeholder involvement and iterative development,
- Has had a strong focus on executing interviews, argues that they are superior to sales meeting in regards to gathering feedback,
- Has a mix of testing predetermined ideas, and exploration,
- Transitioned from doing market research to conduct tests,
- Used Concierge MVP for concept testing,

5.1.6 Iplay

Iplay is a business-to-business venture that was founded in 2015. The offering is a social media platform that lets professional athletes build and develop their personal brands. It also connects the athletes - the users - with e.g. insurance firms and capital management consultants - the customers. Iplay has entered two accelerator programs, and has received one round of external financing. The innovation is new to the industry.

Iplay’s predominant tool to gather data has been surveying. The respondent expressed that before they started out with the venture, they wanted to minimise time spent on unnecessary development, and that they needed data that could help them prioritise in their backlog. Therefore, surveys were at first sent to potential users to gauge the interest for individual features and the offering as a whole. The respondent also argued that this would let them determine if there would be a quick influx of users. This initial survey then led to the
development of a paper prototype that was used to sell the concept to investors and potential customers. Iplay has also actively been conducting sales meetings throughout the whole process. The respondent argued that sales meetings is an efficient tool for validating existing features and to discover new opportunities. Since the initial survey, Iplay has continuously been carrying out surveys with key users to evaluate features of its offering, and to identify new opportunities. The venture has also carried out open-ended interviews with both users and customers throughout the whole process. The respondent expressed that they had released their gamma prototype too early, and that open-ended interviews would give them feedback on how to develop it further.

With time, Iplay has come to rely more on quantitative feedback from its gamma prototype, which is used to optimise the offering by applying A/B testing to determine how a new version performs, relative to the original version. The respondent stated that by implementing minor changes to the live offering every two weeks, different segments and their activity can be measured. When doing these tests, they usually have explicit assumptions which they try to answer. The respondent discussed several metrics which are primarily related to the offering. Another important source of feedback from the users according to the respondent is the support function, and he stated that it has resulted in several changes to the offering.

When it comes to their business model and pricing, the respondent expressed that they have benchmarked other social media platforms and the sport industry. By knowing what price levels that are normal, and in what ways other platforms earn money, Iplay could determine how to form their own offering; the respondent argued “Insight into what a transfer normally costs, what an agent takes for participating in a transfer, and place ourselves as a cheaper alternative, as we’re a more efficient way of working”.

Regarding making sense of the feedback, the respondent stated that most the employees frequently meet with users and customers, with the rationale that everybody in the team needs to acquire an understanding for the users and customers’ needs. He also expressed that all feedback is summarised and shared with all employees on a regular basis in workshops. For the most part, the feedback is synthesised and analysed via user stories. The respondent argued that: “Personally, I think that it is extremely good for everybody to get direct contact with the end users and customers, to really understand what they feel, think, and wish for, to better understand how one’s own job affects the customer(…)”. 

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All in all, Iplay has primarily taken on a market research approach where they have reached out to potential and existing users to find the next step towards product-market fit. As of late, the venture has transitioned towards an approach based on quantitative testing. Iplay has consistently developed both the desirability and the viability of the offering.

Distinguishing characteristics of Iplay:
- Balanced focus between desirability and viability,
- Has primarily conducted market research with surveys and interviews,
- New features are incorporated into the live offering directly,
- Strong employee involvement throughout the whole process,
- Emphasises importance of unsolicited feedback,

5.1.7 Visiba Care

Visiba Care is a business-to-business venture that was founded in 2014. The offering is a white label platform for patient-to-doctor communication via audio and video, and is a market-knowledge innovation. Visiba Care has received several rounds of external financing. The innovation is new to the market.

Before the venture was founded, the soon-to-be founders had several ideas on how they best could serve the discovered market gap. Before the venture was founded, the founders sent out e-mails with various value propositions to potential customers in the Nordics. In connection to this, they constructed a paper prototype that was used to try to sell the idea to potential customers. The respondent stated that it was done to gauge the market's interest for various value propositions. After some time, Visiba Care found a customer who also took the role of an investor, and who took an active part in the development of the alpha prototype. It was at this time that the decision to provide a white label platform was finalised. He argued that this decision stemmed from internal discussions, open-ended interviews with stakeholders, and a survey of patients’ attitudes towards digital healthcare.

Regarding Visiba Care’s income model, the respondent expressed that they looked at platform providers from other industries who had to the same type of customers, and went with what seemed to be the standard: monthly subscriptions. Regarding the price level, the respondent
stated that they assessed their costs, and chose a price that would cover those costs and provide some margin. Since then, the venture has done slight adjustments to their income model and pricing, and tested them on customers in sales meetings. Although this might be effective to a certain degree, the respondent argued that it is hard to have one solution that fits everybody within their industry, as many of their customers are massive public organisations. The respondent also stated that the board of directors of the venture has a big say in the development of the firm and its strategies; that the board of directors set up the goals of the venture and that they must execute according to those directions. Another source of information that affects Visiba Care’s decisions regarding the product development is media analysis. By doing this, the respondent argued that they can pick up new trends within the healthcare industry, and develop the product accordingly.

Throughout the whole process, Visiba Care has had a strong emphasis on carrying out open-ended interviews with stakeholders. The respondent stated that attendance to industry fairs and a dialogue with customers has played a big part in the development of the offering. Although direct customer feedback has played a big part in Visiba Care’s development, the respondent warns of listening too much to their feedback. He argued that it is often hard to show and explain revolutionary things to customers, as they have a difficult time relating to it, and expressed it with the words: “The problem is that if one comes with something completely revolutionary and completely new, they don’t have a clue about what they want to have”. Another reason expressed by the respondent is that when communicating with the customer or user, one might bias the other part, and therefore one risks receiving bad feedback. Furthermore, the respondent stated that Visiba Care had fallen victim to listening too much to the customers. He explained that unclear requests, and requests that later turned out to be false positives, made Visiba Care spend a great deal of resources on developing features that were not what the customers actually needed. Ultimately, this forced Visiba Care to spend more resources on adjusting the offering. The respondent argued that:

“We have pretty quickly realised that we must really take to heart what the customers need, but not so much about how exactly they want it to be executed. They don’t know how, which path that is the best to take, so we learned that very fast”.

Therefore, the respondent stated that the venture now has moved towards iterative development of new features. The respondent stated that by developing beta prototypes that requires minimal
effort and time, but still satisfies the basal need of the customer, they can test if it is a good feature or not, and if it warrants further development. If the feature is considered good enough, it is then developed further and launched to the rest of the customer base. The respondent also stressed the importance of continuous feedback from customers and users in the shape of phone calls, e-mails, and feedback directly through the platform. The respondent stated that each time a patient or doctor has used the app, they are prompted for feedback. This data is then analysed using cohort analysis, to determine each cohorts’ satisfaction level. He expressed that this unsolicited feedback has played a big part in the development of their offering.

The respondent stated that they are tracking a great deal of metrics regarding both the offering and sales. However, the biggest emphasis is on product related metrics. Visiba Care measures behavioural data in the offering, and the respondent discussed several interrelated metrics that together create a funnel that describes the customers’ journey. However, the respondent stated that they do not yet have a OMTM, as they have not yet reached an understanding of what it ought to be.

When it comes to creating an understanding for the customers and their needs, the respondent expressed that the whole team is out meeting with the customers, however, the engineers are mainly participating to explain technical details regarding the offering. The respondent stressed that to create an understanding of the customer and the issues they are facing, they have one individual working in both the business department and with the developers. This person then creates user cases based on customer feedback, which then are regularly shared within the organisation.

Distinguishing characteristics of Visiba Care:

- Initially relied on market research, has transitioned to executing tests,
- Argues for the need of providing customers with concrete suggestions, and that customers cannot relate to abstract ideas,
- Follows core agile principles of high stakeholder involvement, iterative development, and employee participation,
- Has a balance between viability and desirability in their activities,
- Uses both qualitative and quantitative tools,
- Used paper prototyping for concept testing,
5.1.8 Vnu

Vnu is a business-to-business venture founded in 2016. The offering is a combination of a physical ‘clicker’ that lets nightclubs count the number of guests arriving and leaving, and an online service where the nightclub owner can analyse customer guest flows. The offering is a market-knowledge innovation. Vnu has been incubated, and has received seed capital. The innovation is new to the market.

Vnu has extensively been using qualitative tools to gather data and evaluate iterations of the offering. At first, Vnu sent out a promo video belonging to a competing start-up with a similar offering, to potential customers. The respondent argued that this let them gauge the interest before any serious effort and time was spent on development. Soon after, they created a Smoke Test. The respondent stated that they manufactured data and put together in reports that were used to show and describe the concept for customers. The respondent argued that this way, Vnu could immediately start the selling process with the customers and find out what features that were the most desired. He argued that it is difficult to get interviews with customers when one just has started out, and argued that sales meetings are easier to book then, he expressed it with the words:

“At first we faked data and talked to some night club managers in Gothenburg, it should be said that night club managers get an extreme number of requests about cool ideas (...) and they are hard to get a hold of. So we felt that, ok, we cannot speed too much time running in there and just talk”.

In addition to sales meetings, the respondent expressed that they often have open-ended interviews with customers to gauge the interest for new features and to receive feedback on existing ones. However, the respondent expressed that interviews is not always enough, as they might say one thing, but actually do something else; especially if there are several stakeholders. Therefore, Vnu has carried out various types of observations. Firstly, the founder himself took a job at a customer to empathize with their operations, and problems and needs. Secondly, after developing a beta prototype of the physical product and the service they let customers use it for free. When they did, the founding team observed the users to understand how it was used, so that they could empathize with the user. These observations have been carried out throughout the whole process.
The respondent also stated that they are monitoring data from the usage of the offering live, and when any anomalies are found, they immediately set out to visit the customers, and discuss the issue. The respondent expressed that they track few metrics related to the offering, but states that they have had little impact on the development. He argued that it is hard to use metrics, and that they have not had time to work with it properly and a clear prioritisation is required; the respondent expressed it as: “No, we don’t use it very much. It’s difficult with KPIs in software development. (...) We’ve been busy getting a clicker that works, so it has been secondary”.

Before settling for the nightclub industry, the respondent stated that the team members of Vnu have been in sales meetings and talked to firms in other industries where their service might be of use, e.g. at festivals, fairs, and in public transport. However, the respondent stated that their focus at the time was too broad, and that they had to select an industry where they had expertise. The team members at Vnu are all active in the contact with the users and customers. The respondent stated that all team members frequently meet with customers, and argued that it is an important aspect of this process, as it lets Vnu develop an offering the customers actually want, and not what Vnu think they want. The respondent stated that all feedback gathered from their meetings with customers is categorised and then shared internally at a regular basis. Furthermore, he stated that all metrics used within the firm are shared with everybody on the team. All feedback is analysed with its impact and effort in regard; all prioritisation for new iterations is made with the customers in mind, and how easily Vnu can create that value.

When Vnu has carried out tests, observations, and interviews, the respondent stated that they initially had been formulating clear hypotheses, but that they have moved away from that practice. He argued that Vnu is at a point where the customers do not know what they want for themselves, and that it is therefore difficult to test hypotheses. The respondent expressed that no line in the sand for the acceptance or rejection of their tests and hypotheses had been set prior to their execution, but acknowledges that it is important and wants to become better at it.

Distinguishing characteristics of Vnu:

- Has had a very strong focus on the desirability of the offering,
- Has extensively used qualitative tools, especially observations,
- Argued that it is easier to get feedback from customers via sales meetings than interviews, as one can provide something concrete,
Follows core agile principles of high user involvement, iterative development, and high employee participation,

- Argues that start-ups have limited time and resources, therefore it is hard to do everything by the book.
- Used Smoke Test for concept testing.

### 5.1.9 Monocl

Monocl Ego (hereby referred to as Monocl) is a business-to-business venture founded in 2015, but whose offering has been in development since 2012 alongside the founders’ normal operations within strategic consulting. The offering is a cloud-based analytics platform that aims to facilitate collaboration between Life Science firms and researchers, and is a market-knowledge innovation. Monocl has received one round of external financing. The innovation is new to the industry.

Monocl has been conducting tests and collecting data with a diverse set of tools. The respondent expressed that they at first did a Wizard of Oz MVP, where they manufactured reports by hand with Excel. In open-ended interviews with potential investors and customers, Monocl claimed that the reports had been done by their service, which did not yet exist. The respondent argued that these manufactured reports were important when discussing the concept, to get input on its quality and the scope of the offering. However, the respondent expressed that the use of paper prototyping is limited, as most people have a hard time relating to concepts and ideas, and argued that: “One notices that pretty early too, that it is hard for people to relate to a feature before it is built. Because it’s pretty expensive to prototype. It’s always a balancing.”

The respondent argued that a common piece of advice is to develop a cheap prototype as fast as possible and start selling it. Furthermore, he argued that selling an MVP is a dream of many entrepreneurs, and something one ‘should’ do, but that it is unattainable. He expressed that it takes longer time to receive feedback through a selling process, and that the time should be spent on testing and developing the offering, based on the feedback from other types of tests. Furthermore, he argued that when one develops complex services, it is impossible to follow that strategy, and described it as: “Either you have the required quality, or you have nothing at all”.

The respondent stressed the importance of creating multiple incremental prototypes and to test them quickly, and that one should demand short feedback loops from customers and users. Early in the process, Monocl developed a beta prototype where several potential customers were invited. Since then, Monocl has continuously developed incremental updates to its offering that first have been launched to a subset of users, and then globally - if it is deemed good enough.

Regarding their business model and pricing, the respondent stated that they have benchmarked themselves towards the industry in general. The rationale for this is that when one has a revolutionary product, one cannot also have a revolutionary business model; there is no point in taking on excessive risks.

The respondent also stated that they have invited customers on several occasions to their office to carry out focus group sessions, and work on the offering in intensive bursts. Through these sessions, the respondent expressed that Monocl could empathize with the customers’ problems and needs. In addition to these sessions, the respondent expressed that Monocl gathers qualitative feedback from several sources, such as from their live chat within the platform, e-mails, phone calls, etc. The respondent stated that these sources are valuable for them in the development, because the customer can be met directly when the need arises, and that it is a good way to find new features to test out. The respondent illustrated this with an example: Once, a customer requested a feature on a Friday, by the coming Monday, a prototype had been developed and ready to be launched. The respondent argued that this is a good way to ensure that the offering is what the customers want, and that they can build a good relationship with them. However, the respondent also warned that one should not listen too much to customer feedback, as they do not know the product vision and might come with feedback that is irrelevant. He stated that if one makes many decisions, some of them are bound to be bad, but if one has a tight feedback loop and can be agile, it is worth the trouble in the end, as one will reach a better offering in a shorter period. Monocl has not carried out any surveys; the respondent expressed that professionals do not have the time to answer such surveys, and that it is an inadequate tool. The respondent also stated that they compare themselves to other firms within the same industry in regards to their offering; that they always benchmark their offering to that of others. Another important source of feedback expressed by the respondent are expert interviews. That by surrounding oneself by experienced people that have an understanding for the industry, one can get good indications on how to develop the offering.
When Monocl constructs new prototypes, the respondent stated that they have predetermined thresholds for determining the technical quality of the offering, but not for the value creation of the new feature; he argued that one generally hears from the customers’ feedback if the new feature is good or bad, and that one must build an organisation that can receive such feedback efficiently; he argued:

“Most often customers can be pretty good at complaining. Then one must have an organisation that is built to receive that feedback, that is almost the most difficult thing – to organise around the customer.”

Several metrics were discussed by the respondent, which all relate to the venture’s financial side. The respondent stated that their OMTM is now growth in terms of monthly sales, and that the metric has changed over time with the development of the firm. However, the respondent expressed that the tools for tracking metrics in the service take time to develop, and that it is better to go out and meet the customer in the early stages of the development. Another difficulty with metrics, according to the respondent, is knowing if one tracks the right metrics for the stage that one is in. Regarding the interpretation of feedback the venture receives from its tests, the respondent expressed that each request is prioritised after ease of development and fit with the product vision. Furthermore, the respondent stated that most the employees in the firm are not active in the interactions with the customers as it would result in an inefficient workflow. However, he stated that all information is frequently shared with all employees and that they are often included in conference phone calls so they can hear the customers and users directly.

All in all, Monocl has had an approach which at first focused on qualitative market research, and later transitioned to an approach based on testing with primarily qualitative evaluation. All activities discussed were aimed towards improving the desirability of the offering.

Distinguishing characteristics of Monocl:

- Initially did qualitative market research, has transitioned to qualitative testing,
- Argues that complex solutions must be developed, and cannot be tested in other ways,
- Follows core agile principles of iterative development and stakeholder involvement,
• Has not used metrics or a line in the sand, argues that it is better to meet with the customer,
• Has developed structures for unsolicited feedback,
• Emphasises the development of the desirability of the offering,
• Used Wizard of Oz MVP for concept testing.

5.2 Start-ups from Silicon Valley

5.2.1 Case X

Case X is a business-to-business venture founded in 2015. The offering is an online platform where programmers - the users - and businesses - the customers - can carry out anonymous technical interviews. The venture’s offering is a market-knowledge innovation. Interviewing.io has received one round of external financing. The innovation is new to the world.

The first thing that Case X did was to launch a landing page as a smoke test. The respondent stated that they ran an online marketing campaign aimed towards the intended customer segment to draw traffic to their landing page which contained a value proposition. After receiving an ample number of signups on the landing page, Case X decided to carry out a Wizard of Oz MVP. The respondent expressed that the landing page showed that there was interest, however, she also expressed that the most critical aspects of the idea was not validated yet - whether it would be valuable enough for them to use it.

Therefore, the respondent explained that before any software was developed, they put together existing software solutions to mimic the intended function of the service. After validating that there was an interest, and that the solution might work as intended, Case X began to develop alpha prototypes that they tested with users. The respondent emphasised the importance of iteratively developing an offering; that it is an ongoing process to find the right value proposition and offering. Due to this process, the respondent expressed that it took months before their prototype was ready to go into beta testing with customers. However, soon after Case X had released their beta prototype to customers they had a setback. Through heuristics, Case X had made an assumption regarding the customers that was proved incorrect, and explained it as: “This was surprising to me because I thought that in this market, companies should just be happy to talk to smart people, and use that as an opportunity to sell”. The
respondent expressed that they discovered this issue through continuous sales meetings with existing and potential customers, and that it could be solved by adding a new feature to the offering. Through this experience, the venture has come to use more semi-structured interviews to emphasize with the customers. The respondent argued that it is important to make the interview feel like a conversation, so that they will open up more, but also give Case X a change to sell their offering if the interviewee seems interested. When testing new and more significant iterations of the offering, the respondent argued that it is important to do usability testing with 20-40 users; to ensure that it delivers as intended. Another practice at the venture is to have ‘beta customers’, that can accept a suboptimal product in exchange for a discounted price and a new functionality, as this lets Case X develop the new offering together with that customer. She also stated that during such meetings, different value propositions and revenue models were tested to gauge the customers interest and receive feedback. At first, Case X used benchmarking to determine their pricing, but with time, they have experimented more with it by giving higher and higher quotes during sales meetings. The venture has two income models: Firstly, a ‘per hire’ fee which is an industry standard. Secondly, subscription, which was serendipitous. The respondent explained it as:

“when we started out we did per hire fees and stumbled upon subscription organically. (...) so I talked to them and it turned out that their budget did not really permit them to pay these huge sums of money. (...) so that is something we figured out just from talking to customers.”

Case X has not carried out any A/B testing. The respondent argued that A/B testing is a tool that is suitable for mature organisations and products, as it yields incremental improvement. Furthermore, she argued that a start-up always must consider its opportunity costs, and that developing a reporting function for such tests takes valuable time - time that could be spent on developing something bigger. The respondent argued that one cannot test everything, as it quickly becomes inefficient, and sometimes one must use heuristics and consider the options. The respondent stated that they had identified a OMTM which is related to the fundamental value of the offering: the amount of test interviews that convert into real interviews with customers. Moreover, the respondent argued that they are tracking many different metrics that are related to their product, and that several of those related to the offering are connected and create a funnel of the users’ activity. However, the respondent argued that it is important to track data on the usage of the offering early on, but to not define metrics too early in the process,
and that it is better to first make bold moves and focus on the offering. The respondent argued that after receiving the first sale one can begin to focus on metrics and optimisation. When conducting tests of new features, Case X formulates clear hypotheses in most the cases. However, when it comes to determining the outcome of those hypotheses the respondent expressed that they often establish a line in the sand, but not always. She argued that sometimes it is more work to establish the line in the sand than what it is to conduct the test; that sometimes one need to do tests and just see what happens, and explained it as:

“Coming up with those thresholds might be more complex than actually building stuff. Sometimes you just wanna build some stuff. In cases when building some stuff are expensive, and it is going to take a lot of time, you want to build some formalized assumptions.”

When it comes to the evaluation of the tests, the respondent stated that they have weekly meetings where all the latest feedback is discussed, and what they work on during the coming week. Case X has a Trello board where all employees can come with suggestions for new features, as the respondent argues that she as CEO cannot know everything and that employee participation is important to improve the outcome. The respondent argued that it is often hard to know what it is that a customer really wants, to find the problem behind the problem. She argued that this is usually handled with follow-up questions in interviews, or by presenting several alternatives and letting the customer argue for which one that is the most attractive, and why.

Distinguishing characteristics of Case X:

- Has an approach similar to the conceptual model, with a focus on meticulous testing,
- Has had a strong focus on developing the desirability of the offering,
- Has used both qualitative and quantitative tools extensively,
- Argues that predetermined ideas for hypotheses and lines in the sand can be too restricting,
- Carried out concept testing with Smoke Tests and Wizard of Oz MVP,
- Argues that start-ups constantly must prioritise, and that there is a trade-off between resources and accuracy.
5.2.2 Wittycircle

Wittycircle is a business-to-consumer venture founded in 2015. The offering is a social media platform for professionals in nascent projects and ventures, who want to find partners and collaborators. The offering is a market-knowledge innovation. Wittycircle is currently a part of an accelerator, and has received one round of external funding. The innovation is new to the market.

The respondent stated that in the very beginning they set up a Smoke Test in the shape of a landing page with a video explaining the concept. After receiving a good amount of interest for the landing page, a beta prototype was developed. The respondent stated that their first prototype was rudimentary, and that it has been incrementally improved since. The respondent argued that a start-up cannot afford to do market research in the same manner as incumbent firms, but that they always have create something small and test it out, and then go with gut feeling. The respondent emphasised that speed is critical in this process, and that one should not spend time worrying over things one cannot affect; the respondent expressed it as: “You really need to go as fast as possible and don't think about something that doesn't seem to work. When you get the gut feeling that something may be a good option, you go full for that.” Wittycircle has also used focus groups to evaluate changes in its offering. However, it has been used sparingly - they have arranged two occasions with focus groups.

The respondent stated that continuous unsolicited feedback - in person and through e-mail - has been important for the development of the venture’s offering. Wittycircle has used these open-ended conversations to find out why people are using the service, how they found it, and to empathize with users. The respondent also stated that Wittycircle has used external sources of information: the income model and pricing has been evaluated via benchmarking, and the initial market need was determined via industry reports. However, Wittycircle has not yet decided for an income model or a price level, as the offering is still for free, and they are focusing on building the community.

Wittycircle’s OMTM is the number of active users, and it has been tracked since day one. The rationale for using this metric is to increase the desirability of the offering before they strive for growth. The respondent expressed it as: “You don’t want to fill a bucket with holes in it”. To improve this metric, Wittycircle measures behavioural data in its offering. The respondent argued that they are using two or three metrics during each testing period that are specific to
what it is they are trying to improve, and argued that having more metrics than is necessary
leads to information overload. Wittycircle’s metrics primarily relate to their offering.

Before each test, Wittycircle has a set of explicitly stated assumptions and questions that they
want answered, but do not have any formulated line in the sand. The respondent argued that a
test is good or bad depending on the users’ reaction to it, and that it is deemed successful “when
you see the spark, when you talk to people”. However, Wittycircle acknowledged the potential
benefits of including A/B testing to determine outcomes, but has not yet included it into their
operations.

When it comes to the execution and analysis of these activities, everyone in the team does not
participate in the process actively. However, the respondent expressed that they from time-to-
time share the information internally, and that they discuss it to make sense of it. The
respondent emphasised the risk of getting ‘false positives’, and that one should be critical to
user feedback. To mitigate the risk of encountering false positives, the respondent stated that
internal discussions are carried out extensively.

Distinguishing characteristics of Wittycircle:

- Has followed core agile principles with iterative development and high stakeholder
  involvement,
- Testing has primarily been done with quantitative tools,
- Argues that resources have resource constraints and cannot research everything, and
  that action is preferred,
- Argues for speed over accuracy,
- The primary focus of Wittycircle has been to develop the desirability of the offering,
- Has done concept testing with Smoke Testing.

5.2.3 HoloBuilder

HoloBuilder is a business-to-business venture founded in 2014. The offering is a cloud based
software where 360° pictures of constructions sites can be uploaded. The software enables the
customers to provide their stakeholders with virtual tours inside construction sites, and is a new
technical knowledge innovation. HoloBuilder has received two rounds of external financing.
The innovation is new to the industry.
When starting out, HoloBuilder had created a software development kit that was intended for industries with mechanical engineering in production. Therefore, early activities were aimed towards finding a promising market for the technology. The respondent stated that call centres were engaged to book meetings with prospective clients in various industries, and that they had a strong emphasis on selling the product since day one. The respondent stated that if they could sell the concept in an industry, it is where they should go. Furthermore, the respondent argued that one cannot conduct semi-structured interviews in Silicon Valley; that there are cultural differences between Silicon Valley and Europe. Therefore, the respondent argued that one can only use sales meetings to gather feedback and validate new iterations. Regarding HoloBuilder’s income model, the respondent argued that they followed the standard for cloud platforms - monthly subscriptions based on the number of users. According to the respondent, it was the only income model that make sense, given that their offering is an online tool, and he described it as:

“There was never a doubt of being SaaS. We wanted to do Saas. There never was any other option, so it was the only fixed thing. Given that we are a cloud platform, based on the metrics with cloud storage and such, there would be no other model that makes sense for what we do. It is like an online tool.”.

However, HoloBuilder has tested out variations of their income model, and different price levels. Moreover, the respondent argued that one should offer the service for free or to a very low price to bind the customer to them, and then gather the necessary feedback on potential further uses for their offering, and empathize.

In the end, HoloBuilder settled for the construction industry, and did an abstraction of their software development kit, and instead developed their current offering. The respondent argued that the sales meetings and visits to the construction sites became more and more refined over time; initially they were done as a mean of information gathering, then to try out various value propositions, and ultimately to try and sell an early version of the offering specifically designed for the construction industry. The respondent also stated that they early on used investors from the industry as well as empathizing with customers.
The respondent stated that action research - visiting potential and existing customers on site - is the primary driver for their development. Each week, HoloBuilder visits constructions sites to do observations, test new paper prototypes, and to evaluate existing features of their offering. The respondent stated that they often have assumptions that they want to verify during their visits. In addition to the feedback that they gather directly from current and potential customers, the respondent stated that they have mentors who are active within the industry, and provides them with advice on how the product should be developed.

Regarding quantitative tests, the respondent states that they are doing small changes to their website to optimise their offering. Furthermore, the respondent expressed that they used cohort analysis to measure customer segments at a detailed level, emphasising that it speeds up the process of reaching their goals. However, he stated that HoloBuilder cannot make prototypes that go live to all customers at once, since HoloBuilder, as a start-up, does not have the resources to engage in continuous development driven by experimentation. The respondent argued that it is a good academic thinking and that it would be optimal, but that HoloBuilder is a firm that must move forward, and therefore cannot use such methodologies. According to the respondent, methodologies for incremental improvement are too slow, and if one wants to develop something radical such methodologies are not good enough. He emphasised speed to market, and that the market would eclipse them if they do not engage in more radical development.

The respondent expressed that they do not have a OMTM that they are tracking, but that they are actively searching for the metric that is key to creating value for them. The respondent expressed with the following words:

“...finding the right variables to measure is the hardest. One mystic number which makes the business, is the holy grail I would say. Finding this... then it's very easy to grow your business. But finding this is the whole journey, after having it, it's just execution.”

Initially, HoloBuilder had some focus on metrics related to their product, but soon transitioned towards metrics related to the financials. However, metrics do not play a big part in HoloBuilder’s development. They track metrics, but do not use them for evaluation purposes. The respondent expressed that they do not formalise a line in the sand before conducting any tests, and when they are implementing new features
they go with gut feeling, as expressed by the respondent by: “It’s really flying or it’s totally not. There is no in-between I would say, there is no moment where we have to think if it’s good or bad.”

Regarding the analysis of the qualitative data, the respondent stated that they discuss the feedback among themselves, and that all employees situated in the US take part in construction site visits, and in the discussions. All qualitative feedback that they receive is structured in a dashboard that all employees have access to. The respondent stated that they will use more quantitative data in the future, and that they have a dashboard where they store all that data as of now.

Distinguishing characteristics of HoloBuilder:
- Has taken on an approach that is based on qualitative market research,
- Balanced focus on viability and desirability,
- Argues that one cannot conduct interviews with professionals, rather, sales meetings are preferred,
- Argues that existing methodologies are too incremental and academic, and that they as a start-up must move fast, and develop the offering radically,
- Has used paper prototypes for concept testing.

5.2.4 WorkGenius

WorkGenius is a business-to-business venture founded in 2015. The offering is a service that lets applicants - the user - automatically apply to other on-demand jobs if they are rejected from one due to unsatisfied requirements. The on-demand firms - the customer - then bid for the applicants in an automated auction. The venture’s offering is a new market knowledge innovation. WorkGenius has been incubated, and received seed funding. The innovation is new to the world.

At first, WorkGenius had an approach that was based on market research, and carried out open-ended interviews to empathize with potential customers, and to determine the market’s need for their offering. Furthermore, the respondent stated that they reached out to industry experts to get their advice on the market and how to develop the idea. After carrying out these open-ended interviews, WorkGenius spent a considerable amount of time developing a prototype.
When it had been launched, the users had little engagement with it, and WorkGenius sent out surveys to understand the problem. The respondent stated that they had been acting on false positives: that the users had said one thing during the initial interviews, but did something else. After this realisation, WorkGenius decided to pivot from being a consumer-to-consumer to become a business-to-business venture. After the pivot, WorkGenius took on an approach based on testing.

The respondent stated that they carried out sales meetings with potential customers and convinced them to try out the new service. He argued that it is easier to sell a product than to carry out interviews with firms, he argued that:

“With firms it is so much easier. Because, with firms, it is their job to make more money, or save more money for that firm. So, if you say 'Hey, I can help you with your job!', Then you will have someone listening to you”.

The respondent argued that one cannot carry out semi-structured or structured interviews with users or customers, that those interviews result in suboptimal information. He argued that such interviews make the interviewees too uncomfortable. Moreover, he argued that having such an approach is too time-consuming, and that unless you have a considerable amount of money, you must move fast. The respondent stated that before building any prototypes, they constructed a Wizard of Oz prototype by mimicking the function of the service with the use of text messages and e-mail. He argued that this was done to determine their baseline, if the service would be used as intended, and if it could turn into a business case.

The respondent stated that their focus on metrics was initially product related, but that they shifted to focus financial metrics when WorkGenius found a way to monetise the offering. WorkGenius’s OMTM is revenue, as the respondent argued that revenue is the single most important thing in a firm, and that it should be the primary concern. The respondent also discussed that they are measuring users’ behavioural data with several metrics that would let them create funnels to analyse it. However, the respondent stated that they do not include metrics into their decision making for changes to the offering, and that it is more pertinent for larger organisations; he argued that:
“… it is not so that we sit down and think over every decision we take, that: ’What will this do? - for us to either get more applications or conversions, or so that we can close this deal. I don’t think we’re too strict about it. Is it a large firm I guess it’s something else’”.

Regarding making sense of the feedback, the respondent stated that they do not have any formalised way of sharing metrics and insights from testing, and that they do not need to, since WorkGenius is a small organisation where they all sit together and share feedback informally. Regarding feedback from sales meetings and conversations with users and customers, the respondent expressed that they categorise the feedback in a dashboard, and code it into a feedback grid. This way, the respondent argued, they can summarise and better understand the feedback. The respondent also stated that the qualitative feedback and their coding is discussed internally on a regular basis. When deciding what changes to do to their offering and how to test them, the respondent emphasised speed to market, and a short feedback loop, before precision.

Distinguishing characteristics for WorkGenius:

- Initially did market research, has transitioned towards quantitative testing,
- Has iteratively developed their offering, in accordance with agile principles,
- Main purpose has been to develop the viability of the offering,
- Argues that sales meetings are better than interviewing, in a professional setting,
- Argues for speed over accuracy in testing,
- Has done concept testing with a Wizard of Oz MVP,

5.2.5 ShopChat

ShopChat is a business-to-business venture founded in 2016. The offering is an app that adds a new keyboard to smartphones. This keyboard can then be used in any messaging app and lets the user browse fashion products from popular brands through the keyboard. The products can then be shared through the messaging app, or be purchased directly, and customers can promote their brands in the offering. The offering is a market knowledge, and a technical knowledge innovation. ShopChat has received one round of external financing. The innovation is new to the world.
At first, the members of the team would talk to friends, family, and acquaintances empathize with the users and figure out what a potential solution would look like. Soon after, ShopChat carried out semi-structured interviews with potential customers. However, the respondent stated that interviewing customers is an inefficient approach, as it is too difficult to grab their attention. Instead, ShopChat developed an alpha prototype that was used to gather insights into the users’ pain points and how the users interacted with it. The respondent stated that they then went back to the customers with the user insights, and showed the prototype. By doing this, the respondent argued that they more efficiently could sell the concept, and get better feedback from the customers.

Furthermore, he argued that developing an offering together with a customer is often too slow, and that it is better to have something concrete to show; that validation through actual sales is the best tool to validate the offering. In this selling process, the respondent argued that it is important to have a functional prototype, and not rely on paper prototypes. He expressed that paper prototypes are inefficient, and that their only purpose is to limit risks related to innovation, which lead to incremental innovation, and he argued that no radical innovation can happen without risk taking; he argued that:

“In some of these classes [Business school classes] people are told to draw a picture and showing it at the mall. That’s stupid. There is no risk free, and no great innovations coming out that way, what it sometimes leads to is incrementalism.”.

Another tool used by ShopChat early on is surveying; the respondent argued that they used it to evaluate existing users’ attitudes towards the offering, but that they had ceased with the practice as it provided limited insights into their real problems and needs. Regarding ShopChat’s income model and pricing, the respondent stated that they have four different income sources planned. Three of them are based on industry standards, and the fourth is crafted in-house. However, the respondent stated that they are not generating any revenue yet, and that the income models are still theoretical.

ShopChat has also carried out Smoke Tests to gauge users’ interest in future iterations of the offering. By creating landing pages where they portrayed non-existing features as existing, and then driving traffic with social media marketing campaigns, ShopChat could determine if they for example should extend the service to include users with Android phones, and not only iOS
users. The respondent stated that each change to the venture’s offering goes through both qualitative and quantitative testing. At first, the new or altered feature goes through qualitative user testing, where the ones testing it are recorded with audio and video so that ShopChat can scrutinise their actions and reactions. This way, ShopChat can do observations of individual users at a larger scale, and address potential barriers to value creation; the respondent argued:

“They have their phone and video camera and record their whole session. We don’t see heatmaps, but we actually see their hands on it. It’s super powerful. I don’t actually would have gotten by without that. [sic]”.

The testers were so called ‘Mechanical Turks’, i.e. paid testers. If the change passes the testing phase, it is then added to the offering and tested live. The respondent stated that they do such experiments weekly, and that they often do A/B testing to compare the effect of each individual change. However, the respondent argued that one should be cautious when using quantitative data, as is it easily becomes overwhelming, and can lead one in the wrong direction. The respondent argued that they have not done quantitative tests extensively, as they do not have the required know-how within their venture.

The respondent stated that their OMTM is made from several metrics that together constitute the total amount of sharing on the platform. The respondent argued that the percentage of active users sharing is the most important metric, because it ties to the core action that the users need to do for there to be value. He expressed that all actions that ShopChat takes, and all iterations to the offering should somehow work towards the goal of increasing the number of users doing the core action. To understand how various customer segments engage with the offering, the respondent expressed that they use cohort analysis. Furthermore, he also argued that the prioritisation in their backlog of potential iterations is completely driven by feedback and metrics that can help them increase the activity of the core action. The respondent stated that to achieve this, they must have an experiment driven culture, where they set up clear hypotheses which can be tested. The respondent also stated that they do not formalise any line in the sand for when the results from their tests should be accepted or rejected. He argued that it is not possible to have a line in the sand when developing radical innovations, as all questions are being posed for the very first time.
Regarding the evaluation of feedback, the respondent stated that the recorded videos of the user testing are shared regularly with all employees. He argued they do so to get an understanding across the whole organisation of what it is they are actually doing, and how users react to it. Moreover, he expressed that they are triangulating qualitative and quantitative data to get a richer set of data that can provide them with more insights.

Distinguishing characteristics of ShopChat:

- Has had an approach based on testing with qualitative tools, argues that they do not do quantitative testing extensively as they lack the know-how,
- Iteratively develops the offering, in accordance with agile principles,
- The primary focus is to develop the desirability of the offering,
- Argues that paper prototyping leads to incremental innovation,
- Argues that one cannot use a line in the sand when working with innovations,
- Argues that selling is more efficient than interviewing in professional settings,
- Has carried out concept testing with smoke tests.

5.2.6 Case Y

Case Y is a business-to-business venture founded in 2014. The offering is a social media platform that lets high-school students - the users - personalise their college applications through video, and to manage everything related to the application. The college admission officers - the customer - can then review more informative and personal applications. The offering is a new market knowledge innovation. Case Y has received two rounds of external financing. The innovation is new to the world.

The respondent stated that after coming up with the initial idea, they carried out several surveys to empathize with what it is that the students are going through. They also carried out a series of focus groups with students for the same reason. One of the co-founders was a high-school teacher, and the respondent argued that the co-founder’s experience was not enough to guide them in their development, rather, they needed to get in contact directly with the potential users. Furthermore, Case Y has also carried out open-ended interviews with admission officers to get an understanding for their working processes. However, these initial conversations were very informal and open-ended, and the respondent stated that they began to have more formal and semi-structured interviews when they grew. The reason for this, according to the respondent,
is that they lacked the expertise in the early stages of the venture. The respondent expressed that with time, Case Y moved away from interviews and focus groups, and took on a more quantitative approach. A rudimentary beta prototype was launched in the shape of a website where students could upload videos on themselves; the respondent stated that this was to determine if there was a need for their offering on the market. It was also used to test various value propositions.

The respondent argued that qualitative feedback is good, but that one should be aware that it is not always reliable, and that one should try to complement it with prototyping to acquire some quantitative data. Furthermore, the respondent expressed that the quintessence of prototyping is speed; that its main benefit is that it provides fast feedback that can drive development, and that time is not wasted on building the wrong features; he argued that:

“You always want to keep validating, because you don’t want to spend a lot of time building, because for a startup time is key. So you don’t want to spend six months building something, and then realize after six months that no one is using it, that there is no real value. Instead, you want to build something in two weeks, and get them to use it.”

Most the prototypes that Case Y has created have not been tested live with the main offering, but rather via observations of students using the service, and that they have carried out iterations on that feedback, which then again were tested in the same manner. The respondent argued that since Case Y is working on an innovation, they must do experiments and iteratively develop their offering, and that they cannot benchmark themselves against other firms. However, not all iterations to Case Y’s offering are the result of planning and testing. The respondent expressed that one of their bigger decisions - focusing on college applications rather than the transitioning from college to work life - was due to serendipity. By looking at the data they had, they noticed that a great deal of students used the service in a way they had not anticipated.

The respondent stated that the OMTM for Case Y is how many students that are creating and uploading videos. He argued that it is the core aspect that creates value for them, and emphasised the importance for each venture to identify their own unique metric. Their OMTM has changed over time, as the iterations of the offering has changed their focus. However, the respondent expressed that they are measuring the users’ activity on the platform, but it is not a key focus for Case Y. When analysing their metrics, Case Y has not used any line in the sand;
the respondent expressed that it is difficult to do so, and that one must have personnel that is skilled enough for it. He expressed it as:

“We did not do a good job with that but we are starting to now. (...) So we had to bring in some new people who had that kind of mindset. From a year ago to now 55% that were on board [Previous employees], are here, they were not bad people, but they did not have what we required to go to the next level.”

The respondent stated that it is important to share all feedback with the employees, and usually do so through regular meetings where each employee and department present their findings and insights. He argued that by doing so, each employee can be held responsible for their goals and results, and that everybody can help with finding solutions to tougher problems. To make sense of the feedback Case Y gets, the respondent stated that they share user stories; creating a common understanding for the users and what their problems are. This approach is deemed necessary by the respondent, as every employee is not participating in the contact with users and customers. The respondent argued that he wants every employee to participate, but that it is too difficult due to time constraints. Instead, the respondent argued that they have hired college freshmen for internships, to bring the users to them.

The respondent argued that the purpose for all their development is to increase the desirability of the offering. Furthermore, he argued that it is too short-sighted to focus on sales, and that their investors advised them to focus on creating a good offering. Moreover, he argued that vision is more important than making money in the short term. The result of this is that Case Y has actively chosen not to do iterations that could earn them money in the short term, as it goes against the product vision.

Distinguishing characteristics of Case Y:

- Initially had a market research approach, but has transitioned towards testing with qualitative and quantitative tools,
- Case Y’s primary focus has been to develop the desirability of the offering,
- Argues that it is difficult for start-ups to use certain tools, as they lack the expertise in-house,
- Follows agile principles such as iterative development, and high stakeholder involvement.
5.2.7 Cloverpop

Cloverpop is a business-to-business venture founded in 2014. The offering is a cloud based platform for managing the business decision making process, and is a new market knowledge innovation. Cloverpop has received two rounds of external financing. The innovation is new to the world.

At first, Cloverpop was a business-to-consumer venture. The respondent stated that they early on carried out open-ended interviews to understand their potential users, and what their needs and problems were, i.e., to empathize. Surveys were also used as a tool to better understand the problems and needs of potential users. However, the venture soon pivoted to a business-to-business focus. The respondent stated that they had solved the users’ problems, but that their intended way of monetising it did not work. He argued that consumers do not want to pay for software, and that one should focus on a business model based on advertising if one is targeting that customer segment. After this pivot, Cloverpop stopped using interviews and surveys to empathize. However, the respondent expressed that they have used surveys continuously to evaluate their users’ attitude towards the offering. The respondent argued that it is too difficult to get business people to give them their time, as interviews are not perceived as valuable to them; he argued that:

“When you show people product that does not exist yet (...) from my past experience in business they don’t treat it as seriously no matter what they try to do, it’s not the same as when they are spending money.”.

The effect of this is that Cloverpop has moved from a research-oriented approach, to an approach more focused on selling and testing. By meeting with potential customers and pitching various value propositions, the respondent argued that they could validate what features that should be included. In addition to the sales meetings, Cloverpop used content marketing to drive traffic to several landing pages to test various value propositions, which in turn generated more sales meetings. In the context of start-ups, the respondent warned that one should focus on selling the offering, and not marketing, as one quickly can waste valuable resources on paid marketing.
Prototyping has played a major role in Cloverpop’s work. The respondent discussed several different prototypes that they used. Initially, they would construct paper prototypes and smoke tests to see whether people would pay or not for the service. The next step would then be to mimic the function of the intended service, i.e. a Wizard of Oz MVP. By doing the work by hand and presenting it like it was the output of a real software, Cloverpop could test out new and more concrete concepts quickly and cheap. As the value propositions became more and more refined, they began to construct a beta prototype which business customers would use for six months. After this beta prototype, the venture would develop a gamma prototype. All in all, Cloverpop conducted 27 different prototypes. The respondent stated that in the beginning, they often used ‘Mechanical Turks’, who were paid to participate in the usability tests, but have ceased to do so after their pivot.

The respondent stressed the importance of formulating a clear hypothesis before each test so that one has clear idea of what it is that is being tested. When it comes to establishing a line in the sand for a hypothesis, the respondent argued that one cannot always do that; in the case of simple things, where there are standard benchmarks, setting a line in the sand might be appropriate. However, the respondent argued that some situations are too complex, and that you cannot set a line in the sand in such situations. Instead, one must rely on qualitative tests to find out what if it is the right people being targeted, or if there is some other obstacle to value creation. In the cases where Cloverpop uses a line in the sand, they commonly do so with industry benchmarks. The respondent stated that they have not used any focus groups, as he believes that the data from focus groups with business people is too biased. He argued that certain individuals can dominate the discussion, or that some do not dare to speak up, due to the fear of being reprimanded by their seniors. The respondent expressed it as:

“The problem of getting a group together in a business context, is that what a group says is highly dependent on who is in the room. (…) an extrovert person or someone who drank a lot of coffee dominate and lead the group to believe whatever it is that they are saying. Focus groups are weird, other than getting consumer reactions to a product.”.

Regarding measuring user behaviour within the service, Cloverpop has a host of metrics, but the respondent expressed that their OMTM is the share of a customer’s decisions that are made with the help of their offering. The respondent argued that it is the core of the offering, and that they have achieved product-market fit when the activity level is high and customers refer the
offering to their peers. Cloverpop often use cohort analysis to identify trends and patterns within the usage of their offering. The respondent argued for the importance of creating a holistic view of the offering and its usage, to take informed decisions on iterations. He expressed that one should triangulate interviews, surveys, and data from the actual usage of the service so that all issues can be pinpointed. This extensive data collection has proved beneficial for Cloverpop; the respondent argued that the discovery that made Cloverpop pivot from consumers to businesses was serendipitous, and was enabled by their data. Furthermore, the respondent argued that it is important to share insights and data, and does so with managers at the firm on a weekly basis.

Distinguishing characteristics of Cloverpop:

- Has an approach similar to the conceptual model, with a focus on meticulous testing,
- Has had a balanced focus between viability and desirability,
- Cloverpop has primarily used quantitative tools,
- Argues that interviews and focus groups are not pertinent to use on professionals, and that sales meetings are to prefer,
- Has carried out concept testing using a Wizard of OZ MVP, Smoke Tests, and paper prototyping,
- Argues that some situations are too complex for drawing a line in the sand,

5.2.8 Verbling

Verbling is a business-to-consumer-to-business venture founded in 2011. The offering is an online platform that enables peer-to-peer language learning through video chat. The platform connects native speakers of certain languages with adept learners who want to further develop their skills. The offering for consumers and firms is the same, and is a new market knowledge innovation. Verbling has been incubated, and has received three rounds of external financing. The innovation is new to the industry.

At first, Verbling carried out open-ended interviews with college students to create an understanding for their problems and needs, i.e., empathizing. Soon after, they began to develop their first prototype. The respondent stated that they have developed rudimentary, but functional, prototypes for every new feature since the beginning. In the beginning, Verbling’s employees would evaluate the state of the offering and the users’ attitudes, by having open-
ended conversations with them while using the service themselves. The respondent expressed that this lets Verbling get a more intimate connection with their users, and ultimately, better feedback. The respondent stated that using their own service actively has played a major part in the development of the offering, as it creates an understanding across the whole organisation for the users and customers’ needs and problems.

In time, Verbling began to observe the actions of the users via the help of heat mapping; allowing them to see snapshots of how the users engaged with the gamma prototype. These observations then became more sophisticated when Verbling began to pay so called ‘Mechanical Turks’ to test their offering, while being recorded on audio and video. The respondent argued that there is one source of feedback that has had a strong influence on the development of their offering: their support function. Some of the larger pivots and iterations that Verbling has carried out have been the result of unsolicited feedback from users.

Regarding the income model of Verbling, the respondent stated that they have had two primary models. At first, the venture had a subscription model, and in the beginning the pricing was based on benchmarking. In time, Verbling changed their income model to being a small share of each lesson carried out on their platform; the respondent expressed that this income model was also based on benchmarking firms in the language tutoring industry.

The respondent stated that they used a focus group in connection to the launch of their smartphone app. Verbling invited friends that got to test the app, and let them answer a survey afterwards. Surveying is a recurring tool for Verbling. The respondent stated that they have used surveys as an evaluation tool since the beginning of venture, and after each new iteration they send out surveys to users to evaluate it. However, the respondent warned that some caution needs to be taken when developing prototype. The respondent argued that Verbling could develop extremely simple prototypes in the beginning, but as the venture became more and more mature, that possibility was lost. Releasing new features that are too rudimentary makes it so that the venture risks losing credibility with its customers; that expect more from you with time. Therefore, Verbling has transitioned to more incremental development.

The respondent stated that they recently started using A/B testing, and track a great deal of metrics related to the usage of the offering. Although Verbling now uses quantitative data to evaluate its offering, the respondent stated that they initially did not track any metrics. The respondent argued that the main purpose of a venture is to generate money, and that it therefore
should be the primary focus. Furthermore, he argued that a common entrepreneurial myth is that one can optimise for something in the product, and that it will lead to a successful result down the road. Rather, he argued that optimising should be done when you have achieved product-market fit. The respondent said:

“That is a bit of a myth, that one can optimise for something else [the product] and expect everything to go well. All investors want to see a business where everybody can see that one makes money on what one does.”

Now, Verbling uses several metrics that together form a funnel where they can track the customers’ journey through the service. The respondent stated that they use industry benchmarks to analyse the conversion and churn rates. Even though product related metrics have become important for Verbling, the respondent expressed that their OMTM is revenue growth per month, and has been so ever since the could charge for the offering.

Before one constructs a prototype or conducts a test, the respondent emphasised the importance of formalising hypotheses before starting. The rationale for this is that conducting tests without a hypothesis makes one focus on things that are not relevant, and that are not generating value. When conducting tests, the respondent defines success as an improvement relative to the previous state, and that they do not establish any line in the sand for when to accept or reject their hypothesis. However, Verbling did start using hypothesis recently, and it has not been used continuously in their work. The respondent stated that all employees take an active part in the development of the venture, and the tests that they carry out. He expressed that it leads to more and better solutions to their problems. When deciding what iterations to carry out, the respondent argued that one most acknowledge the importance of streamlining the offering by being selective when developing features, and to remove features that are not directly connected to the core offering. Furthermore, he expressed that the process often is chaotic, and that it is difficult to do everything by the book. The respondent said:

“The hardest thing is to prioritise right. We have a fixed amount of developers and money in the bank. (...). We don’t have a formal process, if we had it, we might already be done, it’s damn hard. It might sound chaotic, but that’s how it is. Startups are chaotic by nature.”
Distinguishing characteristics of Verbling:

- Initially, unsolicited feedback had a strong influence on the development, but they now have an approach based on testing, primarily using qualitative tools,
- Has had a focus on the viability of the offering,
- Argues that start-ups cannot follow methodologies by the book due to resource constraints, and that they must prioritise heavily,
- Argues that start-ups should not optimise their offering, rather, they should focus on developing a business case,
- Argues that in time, one cannot do rough prototypes, as it would hurt their legitimacy, due to customer expectations.

5.2.9 Ever App

Ever App is a business-to-business venture founded in 2015. The offering is an app that lets the users find out what clothes people are wearing in TV-shows and movies, by taking a screenshot of the TV. The user can then find that piece of clothing through the app and buy it. The customers are e-commerce sites who pay a commission on each generated sale. The venture’s offering is a new market knowledge innovation. Ever App has received one round of external financing. The innovation is new to the world.

At first, Ever App conducted a series of focus groups with the goal of creating empathy for the users’ problems and needs. The respondent stated that once they had achieved a good enough understanding of the users, they started developing an alpha prototype. To evaluate the suggested solution to the users’ problems, Ever App carried out more focus groups with new and existing users where they got feedback on their interactions with the offering, its aesthetics, and the feel of it. The respondent stated that focus groups is the primary tool for evaluating new iterations, and that Ever App has done it continuously. In addition to these focus groups with users, the alpha prototype was demoed to representatives from the entertainment industry, to gauge their interest and receive feedback. The respondent expressed that these meetings played an important part in establishing that there was a market for the offering, as they could try to enter partnerships with studios. Furthermore, the demoing of the prototype led to that Ever App now has two members on its advisory board from the entertainment industry.
When it comes to Ever App’s income model, the respondent stated that they have followed the industry standard; that if one helps with a sale at an e-commerce site, one receives commission. The respondent argued that they have ideas for other ways of monetising the offering, but has not tested any of them yet. The rationale for this is that Ever App will get real validation of the business model when people are using their offering; that the business model might be something else, and that the important thing is to focus on creating value for the user. The respondent argued that observations and focus groups are the best ways to test new iterations; by testing several variations of the same feature at the same time, and interpret the users’ reactions, they will know how to further develop their service. The respondent said:

“I saw that they were double tapping the screen, so I asked ‘why are you double tapping?’ They responded: ‘I was trying to save it in my like feed’. So, then we created a like feed, because we saw a lot of people doing it.”

In addition to the observational aspect of the alpha tests, the respondent stated that they often ask direct questions to the participants to find out what features they want next. Moreover, the respondent argued that such tests can be used for two different reasons: not only to test new iterations, but also to discover new opportunities from the users’ actions. Ever App has a strong emphasis on qualitative tests before a new iteration is released to all users - the respondent argued that by testing new and unfinished features quantitatively, one risks deterring users. The respondent argued that when conducting tests, it is important to observe the facial expressions and body language of the users, as it lets Ever App interpret their true reactions to the offering. He argued that it is important to do so, because users are reluctant to be frank in their feedback. Furthermore, he stated that they do not have any line in the sand for when the result of a test is to be considered good enough for the feature to be implemented; the respondent argued that it is impossible to do so in qualitative tests, and said: “All this is qualitative, it’s not a number. (...) You see their reactions, what happens to their face, what they do with the phone, where they see frustrations.” When doing these types of tests, the respondent expressed that they sometimes have a purpose with the test, and that it sometimes is exploratory so that they can see what it is that people do.

Ever App is tracking the users’ activity within the gamma version of the prototype, and the respondent expressed that their OMTM is how many screenshots each user takes per day, as it
is the core to the value creation of the firm. The respondent discussed several metrics that they use which are related to the usage of the offering, but that they do not use that data actively in the decision process. Ever App does not have a formal system for sharing insights and information among the team members, however, the respondent stated that they have a dashboard where all metrics are visible to everyone. He stated that the feedback which they receive from users through tests are interpreted through discussions within the team.

Distinguishing characteristics of Ever App:
- Initially relied on market research but has transitioned to testing using qualitative tools,
- Argues that one should not focus on the viability of the offering, but rather the desirability, and that the business model will change naturally with the desirability.
- Argues that all iterations should be tested qualitatively before being launched, as unfinished products risk deterring users,
- Follows agile principles of high stakeholder involvement and iterative development.

5.2.10 StudySoup

StudySoup is a business-to-consumer venture founded in 2014. The offering is an online platform that lets top students at universities sell their class notes and study guides to their peers, and is a new market knowledge innovation. StudySoup has received five rounds of external financing, and has been incubated. The innovation is new to the market.

The first thing that StudySoup did was to develop a beta prototype and test it on three different universities at the same time. By doing these tests simultaneously, the respondent expressed that they could triangulate the data and ascertain whether there was a need on the market. If these tests could generate a certain amount of cash flow in three months, the respondent considered the core need to be validated. To test various value propositions, the respondent stated that they do Smoke Tests; by creating multiple landing pages and e-mail campaigns including different value propositions, StudySoup could find the ones with the most potential via A/B testing. Regarding carrying out tests, the respondent emphasised the importance of shortening the time it takes to finish them. Instead of developing a new feature and test it, he is more concerned about how he can test it in a day, or in an hour, in some other way. The respondent argued that speed beats precision when it comes to decision making; that it is better to test something one is unsure of, than to evaluate it for too long. He expressed that StudySoup
has an experiment driven culture, and exemplified it with their viability testing. The respondent stated that they benchmarked the baseline for their pricing and income model, however, they have since then run split tests to determine which model and price level that would be optimal. Furthermore, the respondent argued that they often formalise hypotheses before running tests, so that each new test will take them further towards their end goal. The respondent expressed:

“So it’s better to act now on a mediocre decision than be 100% certain, and act two weeks from now. (...) It would take one week to build this product, but how can I get this tested in one hour? (...) Then you can run about 100 test a week and find a better product. (...) We brainstorm a good direction, but the most important for us is acting on it as quickly as possible.”

The respondent stated that they have carried out a few surveys, but he argued that it is a suboptimal tool. StudySoup would initially create surveys to get a better understanding for their users, and how to communicate with them, but the respondent argued that people are inclined to give answers that ‘sound good’, instead of replying in truth, and that it is therefore a substandard tool; he argued that:

“We have not been tremendously successful with surveys in the past because people just select what sounds right, or they don’t really now. It’s hard to ask people what they want from a product. Interviewing is a little better…”

With time, StudySoup adopted a more qualitative approach. The respondent expressed that the different departments at the venture conduct semi-structured interviews within their respective field to evaluate users’ experiences with the existing features. Most the interviews that StudySoup carry out are with the top students who sell their class notes; the respondent argued that it is because they are the most important group to understand, as it is they who generate value on the platform. Moreover, the respondent has carried out interviews with users throughout the whole process, but these have been open-ended and exploratory. StudySoup has used observations sparingly. The respondent stated that they have only used observations a few times to do usability testing, and expressed that it is a difficult practice.

The respondent stated that StudySoup has had two business models: firstly, a transactional model where users would pay for each set of study notes. Secondly, a monthly subscription.
According to the respondent, they had to move from a transactional model towards monthly subscriptions as their data showed that there was a misalignment between various users, and price levels on the market. He argued that a monthly subscription would be more fair to all users, and that they wanted users to come back and use the service continuously.

StudySoup has had a focus on viability since day one. The OMTM expressed by the respondent is revenue, and the respondent argued that since they are running a marketplace business, revenue is the purest indicator of success. The respondent expressed that they do track user behaviour within the service, but metrics related to the firm are the most important. The respondent stated that all feedback and insights are shared within the venture weekly, and that each department presents their own findings to generate an understanding across the organisation. However, not all employees have taken an active part in the testing and meeting with users. When any deviating behaviour is noticed, StudySoup arranges brainstorming sessions to find the potential source of the issue, and then generates test to pinpoint it. The respondent argued that all issues can be assigned to two categories: Firstly, friction, which is that the user is having a bad experience due to a suboptimal execution from StudySoup’s side. Secondly, motivation, that the value proposition is not attractive enough to the user. The respondent stated that they do not have any formalised line in the sand before carrying out tests, rather, they evaluate everything qualitatively; he argued:

“No, it’s more like iterative, the designer will see how this person is responding. If that makes sense to us we will make changes upon that basically. I don’t think it was statistically significant (...). we just take it at face value, if we are watching someone and they don’t follow the behavior that we need them to follow, we just take note of that and brainstorm.”

Distinguishing characteristics of StudySoup:

- Has an approach based on testing using qualitative and quantitative tools,
- Follows core agile principles of iterative development and high stakeholder involvement,
- The primary focus has been to develop the viability of the offering,
- Argues strongly for speed over accuracy in the development,
- Has done concept testing using Smoke Tests,
- Args for the importance of formulating hypotheses, to have focus in the development.
6. Analysis and Discussion

This chapter presents the analysis of the study, has been structured after the conceptual model found in section 4. Emergent findings that related to one of the three elements have been put in respective element. In appendix 8.1, 8.2, and 8.3 there is a complete overview of each respondents’ actions and characteristics, which the authors recommend using when reading the analysis and discussion.

6.1 Preparation

6.1.1 Empathize

There were 14 out of the 19 respondents who actively tried to empathize before developing an offering. By conducting interviews, observations, and focus groups they got to know the problems and needs of their customers and users better. The 5 respondents that did not actively try to empathize claimed that they can understand the customers’ true needs through sales meetings. However, this goes against Dorst (2011), who argues that one should not be in either the solution space nor the problem space when empathizing. Out of the 5 respondents who used sales meeting to empathize, 4 come from Gothenburg, indicating that start-ups in Gothenburg have a stronger tendency to have one foot in the solution space during this process. Four respondents believed that they had gained empathy, but realised that they had acted on false positives. In the prolongation, this resulted in misdirected prioritisation and a waste of resources. Therefore, the findings indicate that it is difficult to use empathy to discover ‘the true problem’, as suggested by Dorst (2011) and McKelvey and Lassen (2013). The literature used for this study lack guidelines on how to determine whether the true problem has been found. To know if one has acted on false positives due to lacking empathy can only be determined retrospectively, and poses a huge risk to start-ups with little resources.

6.1.2 Pursuing Desirability or Viability

Most of the respondents had a one-sided focus in their operations, with 5 respondents focusing on viability, and 9 respondents who focused on desirability. There were very differing opinions on whether a start-up’s primary concern should be to focus on desirability, or viability. The 9
who had desirability as their primary focus argued that they need to develop the offering first, and not spend time focusing on their income model or revenue, as such things will come naturally if you create value for the customer. The 5 respondents who had viability as their primary concern argued the opposite. According to them, they are first and foremost running a business, and therefore, a focus on the income model and sales is imperative. A one-sided focus can result in a sophisticated product, according to Martinsou and Poskela (2001), but it does not necessarily lead to a good business case; the respondents might find a product-solution fit, and not product-market fit. On the other hand, if a start-up only focuses on viability, it might be eclipsed by competitors in a turbulent and fast-paced market. However, to primarily focus on one aspect of the venture is in line with Croll and Yoskovitz’s (2013) argument, that it helps start-ups to focus on what is most important at each stage in their development. To have a one-sided focus could be beneficial for start-ups in terms of resource management and prioritisation, however, it is difficult to know when to shift focus from desirability to viability, or vice versa.

Even though most of the respondents had a one-sided focus, there were 5 who balanced the two aspects in their approach. The low number of respondents with a balanced focus indicates that developing an equilibrium between viability and desirability, as proposed by Brown and Kätz (2009), is fairly uncommon. To have an equilibrium between viability and desirability could enable the respondents to detect shortcomings in either aspect at an earlier stage, which can reduce sunk costs. However, having a split focus might slow down the ventures’ processes, and can be considered as an alternative cost.

6.1.3 Forming Hypotheses

Within the sample, there were 7 out of 19 respondents who formulated clear hypotheses. However, only 4 out of those 7 respondents used hypotheses consistently. An argument for not doing so is that it can sometimes be counterproductive to have a predetermined idea of what one should look for; that one sometimes must do tests and just see what happens, to discover unexpected opportunities. Learning from exploration goes against Ries’ (2011) view that one should consistently use hypotheses to ensure validated learning. Although hypotheses can generate validated learning, it can be hard to balance their use; being too hypothesis driven might result in an inefficient workflow, as the start-up risks setting up too many tests for non-critical issues. Considering that so few of the respondents consistently use hypotheses, and that
several argued that one should not use it excessively, it seems as if Ries’ (2011) ideas on creating hypotheses for validated learning are not widespread within the sample.

Furthermore, there were only 3 respondents who set up a line in the sand for their hypotheses. There was a general negativity among the respondents regarding predetermined thresholds for when a test should be considered successful or not. Several of the respondents argued that it is too difficult to set up a line in the sand that would make sense to them; that they could set one up, but that it would be arbitrary. This difficulty is acknowledged by Croll and Yoskovitz (2013), who argue that benchmarking against an industry standard is preferable in such cases.

There were several arguments against setting up a line in the sand. Firstly, that it is faster to received feedback if one just does a test. Second, that it is impossible to set up a line in the sand when working with radical innovation, as all questions are being posed for the first time. Thirdly, that it is difficult to set quantitative thresholds for qualitative tests. The two recurring and underlying themes are that setting a line in the sand is too difficult or too time-consuming.

Three of the respondents argued that the only way to determine if a test is successful is if it has a radical effect on the venture. This arbitrary definition of success risks exposing the respondents to biases in their decision making regarding the future development of the offering, which could be avoided with a predetermined threshold, according to York and Danes (2014).

6.1.5 Defining Metrics

Overall, the respondents in the sample had a greater focus on tracking metrics related to the offering than financial metrics. In the sample, there were 12 who focused on metrics related to the offering, and 7 who focused on financial metrics. Geehr (2010) and Ingle (2013) both argue that one should focus on product related matters when conducting tests, but this is not unanimous in the sample as 5 respondents argued that sales is the best way to measure the success of an iteration. The focus on financial metrics run contrary to Ries (2011) and Croll and Yoskovitz (2013), who argue that an early financial focus risks terminating innovations prematurely. However, the focus on financial metrics is in line with Schilling’s (2013) argument that they are pertinent to achieve a proper evaluation of a project. Furthermore, there were 12 respondents who had a OMTM; 4 in Gothenburg and 8 in Silicon Valley. Thus, it seems as if start-ups from Silicon Valley are more prone to optimise their offerings towards one specific goal. Out of the 12 respondents who had an OMTM; there were 8 who had one that related to progress of the offering, while 4 had an OMTM that related to the financial
performance. This indicates that many of the respondents have a strong focus, which Croll and Yoskovitz (2013) argue is good, as they then do not risk getting caught up in lesser problems. Two respondents argued strongly against having a focus on metrics too early, as there are too many changes happening early in the development, and that it provides a focus on details, rather than the big picture. This line of argumentation is supported by Toivonen (2015), who states that a OMTM might shift one’s focus from radical to incremental innovation, as everything becomes centred on improving the current offering.

An emergent theme relating to the OMTM is the ‘Core Action’. One respondent referred to Sarah Tavel - a former employee at Pinterest - who is supposed to have created this concept. She defines the core action as the quintessence of the offering, the one thing that drives value (Tavel, 2016). Tavel exemplifies the core action with users on YouTube uploading videos, or professionals using LinkedIn who befriend each other and connect. Without those actions, Tavel argues that the platforms would not generate any value to their users, or their creators. When the transcriptions of the interviews were revisited, 3 more respondents who follow the same logic were discovered. In addition to those 4 respondents, one more expressed that they are actively searching for it. Tavel argues that optimising for actions that are not core actions is detrimental to the value of the offering, and eventually leads to a decline in momentum. Rather, Tavel illustrates that optimising for non-core actions is like eating empty calories: it tastes good, but it is not healthy for you. This line of argumentation runs contrary to that of Ries (2011) and Croll and Yoskovitz (2013) who argue that optimisation of e.g. user engagement in terms of weekly active users drives value. In the sample, there were several respondents who discussed the concept of optimising for a metric, and who argued that one should not do it, that it is a myth that one can optimise for one thing and expect there to be positive results down the road. There seem to be little unity whether one should optimise or not, and if so, what one should optimise for.

6.2 Execution

6.2.1 Qualitative Approaches

6.2.1.1 Interviews

Interviewing as a mean to gather information, or evaluate new offerings, was a controversial topic for many of the respondents. In total, 15 out of 19 respondents had carried out interviews.
Out of these 15, 4 respondents carried out both semi-structured and open-ended interviews, 10 carried out only open-ended interviews, and 1 carried out semi-structured.

There were strong arguments both for and against interviewing. Five respondents argued that interviewing is an efficient tool, as it generates detailed feedback. Moreover, it was argued that it is easier to access a wide range of potential customers if one does not try to sell them anything. On the other hand, 6 respondents argued that interviewing is an inefficient tool. It was argued that interviewing cannot generate any insightful information, as interviewees have a too hard time relating to abstract concepts and ideas, and that one risks getting false positives instead of solid validation. Furthermore, another argument against interviewing is that professionals do not have time to participate. Most of the respondents who conducted interviews did not only do so to empathize, but also to evaluate new iterations. Worth noting is that all start-ups who argued that sales is to prefer over interviewing all have a business-to-business market strategy, and the 6 that have carried out semi-structured interviews have done so with consumers. It seems as if the respondents prefer interviewing or sales dependent on what stakeholder they interact with. These findings also correspond with Ries (2011), who argues that selling a prototype to potential customers can be a good way to validate its product-market fit. However, one question that must be posed in light of these findings is with whom one preferably should conduct an interview, and when selling might be more pertinent.

6.2.1.2 Observations

The use of observations was limited in the sample, only 7 respondents used it. However, it was much more evident among the respondents from Silicon Valley. In Gothenburg, 1 respondent carried out observations, while there were 6 respondents who did so in Silicon Valley. Only 2 of the respondents used observations as a mean to empathize, while the remaining 5 respondents used observation as a tool to evaluate new iterations. However, the ways that these 5 respondents observed differed: 3 of the respondents invited users to their offices to test their offering, while being in the same room so that they could look over their shoulders, they argued that it lets them analyse the user directly, respond to their inquiries, and ask why they do what they do. This is in line with the Hasso Plattner Institute’s (n.d) argument for creating a holistic understanding for the users’ problems and needs by combining interviewing and observations. The other 2 respondents used technical solutions to observe the actions of the users. They paid users via online services to use their offering, while being recorded on audio and video. They argued that it is superior to doing observations ‘over-the-shoulder’, as it allows them to revisit
the observations, and to share the observations with other members of the team and various stakeholders. Furthermore, a strong argument for using observations is that it lets them test how good a new feature is before it is released to a wider audience, and that it lets them find problems with the new feature. This line of thinking resonates with Hokkanen and Leppänen’s (2015) argument that one should do usability testing with at least 5-13 users before releasing something to a wider audience, as there otherwise might be problems that restricts the product’s value creation. Moreover, Hokkanen and Leppänen argue that one risk getting false negatives if users do not understand the true value of the offering because of these potential restrictions. An interesting aspect of these findings is the appropriateness of observations in different contexts; how, when, and on whom one should observe. Even though several of the respondents who used observations have a business-to-business market strategy, 6 respondents used observations on consumers. It seems as if observation is primarily used on consumers, and to evaluate new iterations, instead of being applied universally and to empathize.

6.2.1.3 Focus Groups

Focus groups is the least used qualitative tool in the sample; only 4 out of 19 respondents used focus groups in some way, and only one did it continuously. The respondent that used it continuously did so to empathize. One argument for not using focus groups with professionals is that the results are too biased. Another argument is that focus groups is a tool better suited for incumbent firms, and not pertinent for start-ups as it is too expensive and time-consuming. These results support the findings of Hoyer et al. (2010), who suggest that focus groups can be too expensive for many firms. Hoyer et al. also suggest that it leads to limited customer-firm interaction, which is likely a reason for the low usage of focus groups, given the respondents’ heavy emphasis on customer interaction and testing iterations live. The low number of respondents using focus groups could also be explained by the general negativity towards asking customers what they want, instead of giving them what they want. This can be exemplified by the Senior Vice President of Industrial Design at Apple, who has expressed that focus groups are inadequate for innovation, as the results are biased (Couts, 2012).

6.2.1.4 Benchmarks

One tool that proved to be quite common was benchmarking. In the sample, there were 9 respondents who used it in some way. The most interesting aspect of this is that all the respondents who used it, did so for their viability. When deciding prices levels and income models for their offerings, these 9 respondents looked to similar firms, or firms with the same
type of customer. One respondent argued that since they have such a radical offering, they do not want to scare away customers by also having a radical business model. Several others stated that software-as-a-service firms have a given income model, and that it is just natural that they do the same. This mentality runs in stark contrast to the respondents take on testing and experimenting on the offering; indicating that they are more concerned about the desirability of their ventures, than the viability.

6.2.1.5 Unsolicited Feedback

Even though the respondents in the sample went to great lengths to gather feedback that can drive future iterations of their offerings, not all feedback was solicited. There were 9 respondents who stated that several changes to their offerings had been driven by unsolicited feedback from users and customers, and not from formal tests. This phenomenon was especially visible in Gothenburg, were 6 out of 9 respondents did so, while 3 out of 10 respondents from Silicon Valley used unsolicited feedback. Several of the respondents who used unsolicited feedback stated that they deliberately had set up functions and routines were such feedback could be identified and analysed. The literature that was examined for this study all emphasised how firms themselves actively can go out and gather feedback, but did not mention the potential value of unsolicited feedback. These findings show that there might be value in setting up mechanisms that allow for unsolicited feedback, furthermore, they confirm previous findings by Wirtz, Tambyah, and Mattila (2009) who argue for the importance of designing around the collection of unsolicited feedback.

6.2.2 Quantitative Approaches

6.2.2.1 Surveys

Surveying is a tool that has been used by 12 out of 19 respondents, however, only 4 respondents have continuously done so. The tool was primarily used to evaluate new iterations, but it was also used to empathize, and to map out customer segments. Out of the 12 respondents that have used surveys, 9 did so on consumers, and 3 on professionals. The respondents who stopped using surveys argued that they are suboptimal in two ways: Firstly, the response rate is too low. Especially among professionals, who do not want to, or do not have the time to fill them out. The respondents argue that they cannot do anything with the limited feedback. This is in line with Krosnick (1999) who argues that self-administered surveys typically obtain low response rates, even while following guides for questionnaire design.
Second, it was argued that survey feedback often is biased. Those who answer the surveys are inclined to answer what “sounds good”, instead of answering truthfully. The second reason supports Ries (2011) argument that respondents often have difficulties with assessing feelings objectively. Many of the start-ups began using surveying as it is an inexpensive tool that is readily available, but ceased doing so as it could not provide enough quality feedback.

6.2.2.2 Minimum Viable Products and Prototypes

It seems as if the respondents in Gothenburg are a bit more prone to dive into the action compared to their peers in Silicon Valley. Only 3 out of 9 respondents from Gothenburg tried some variant of Ries’ (2011) suggested MVPs before they launched their service or began to develop a prototype. In Silicon Valley, 6 out of 10 respondents tried some form of MVP before going to the next step. One of the respondents from Gothenburg argued that they cannot use MVPs; that one must develop a prototype due to the complexity of the service. There might be some merit to this argument, as 12 out of the 19 respondents interviewed have complex services that connect various stakeholders, and the value of the service is created during their interaction. By developing a prototype and put in the hands of the users, the respondents can do what Brown and Kātz (2009, p.74) calls “Prototyping in the wild”, that lets complex social interactions be tested. However, this does not necessarily go against Ries’ (2011) ideas regarding MVPs, as he argues that they should test an idea with the least amount of effort and development time. It could be that the respondents who jumped right into the development could have tested their ideas in other ways, and what it is that constitutes the ‘least’ amount of effort might be highly subjective.

Out of the 19 respondents in the sample, 6 did paper prototyping. The primary reasons were to have something to show for during the initial sales meetings, or as a mean to test early concepts of new iterations to their offerings. One of the respondents argued strongly against paper prototyping. According to the respondent, paper prototyping only leads to incremental innovation, as its main objective is to reduce risk, but that risk cannot be avoided when it comes to innovation. The reason as to why paper prototyping was used so little in the sample might be explained with the same argument as for the low number of MVPs: it is difficult to convey ideas through paper that rely on complex social interactions. Furthermore, Smith and Ulrich (2001) argue that a challenge with prototyping is to have a clear enough product concept to
acquire meaningful feedback. It could be that the respondents do not think that paper prototyping is a meaningful activity as the potential feedback from it is limited.

The most common approach within the sample to test an innovation was to construct a prototype. All respondents in the sample constructed gamma prototypes where new iterations are tested live. However, only 8 respondents did beta tests where a new iteration was tested during a set period, and in an isolated environment. The rationale behind constructing prototypes was first and foremost that it provides feedback that is genuine. Most the respondents recognised the risk of receiving false positives when collecting feedback from customers, and saw prototyping as a way to truly know the potential of the innovation. Prototyping was perceived as an inexpensive way that would let them test the market before committing too much resources to their ventures. The respondents’ arguments for prototyping follow the same logic as Ries (2011), who argues that product-market fit cannot be acquired through research, but only through testing.

The clear majority of start-ups emphasised that a great reason as to why they make prototypes is speed. More specifically, they argued for two types of speed: Firstly, the speed in which they receive feedback. Four of the respondents explicitly stated that they have spent time and money on developing features in vain, because they acted on false positives from customers or users. This made them move to prototyping instead, and they argue that it reduces the time and money spent in vain, as customers are included earlier in the process. This resonates well with the arguments of Ozer (1999), Ries (2011), and Brown and Kåt (2009) who all state that the primary objectives of prototyping are to shorten the time to get feedback, and to reduce development costs. Second, the speed in which they reach the market. Most of the respondents argued that prototyping lets them to shorten the time to market. Financial constraint was the predominant reason for the perceived pressure to quickly reach the market.

Another reason for prototyping, that all respondents argued for, is the chance to learn more about the customer, and the offering’s inherent advantages and disadvantages. One respondent exemplified it with their previous method of working: they would spend months on prototyping according to customers’ requests, only to find out that the customers did not really have any need for the new features, and this put them back to square one. They did not learn much, and had wasted time and money. This can be explained by Brown and Kåt (2009) argument that excessively advanced prototypes return less value than rudimentary ones, in terms of learning.
Several respondents argued that it is better to spend a day or a week to test something that you are somewhat sure will work, than to spend three months testing something you are almost entirely sure of.

However, as the start-ups become more mature, this mindset might become increasingly difficult to keep. There were 2 respondents who expressed that they cannot release too simple prototypes. They argued that it would hurt the relationship to their existing clients, as they would be perceived as unprofessional. Ries (2011) suggests that this issue of hurting one’s reputation can be solved by doing the experiment under a new or fake brand name. However, this type of approach is probably doable if one has a whole concept to try out, but if one wants to conduct a change to an existing offering this approach might prove difficult. There was also a general notion among the respondents that they cannot spend too much time experimenting ‘by the book’ with different opportunities until they find the optimal solution. Several of them argued that such tools are more pertinent for incumbent firms, which is in line with Paternoster et al.’s. (2014) findings that start-ups prefer to apply lightweight methodologies that allow for rapid alterations to the offering.

One example of why the respondents could not ‘do it by the book’ is related to prioritisation. Most the respondents stated that they had to prioritise heavily, and several stated that they had a long list of features and ideas lying in the backlog, waiting to be tested. They argued that they do not have the resources required to pursue several different opportunities at the same time. An important aspect of Design Thinking is that of ‘Divergent Thinking’, where several potential solutions are to be tested to find the best fit (McKelvey and Lassen, 2013). However, this kind of approach was impossible for the respondents, due to a lack of resources. This line of argumentation from the respondents can also be explained by Hokkanen and Leppänen’s (2015) findings that many entrepreneurs often believe in their own ideas, and feel that spending time and money on idea validation is a waste, and should be minimised.

6.3 Evaluation

6.3.1 Employee Participation and Sharing Insights

In the sample, there were 8 respondents who actively included employees in their operations to find product-market fit. All respondents who actively included employees argued that it is
to create an understanding - across the whole organisation - of the users and customers’ needs and problems, so that they can create a better offering. This line of reasoning resonates with Kolkö’s (2015) and Stickdorn and Schneider’s (2011) argumentation that employees should be active in the process to create better services. Furthermore, it lets the employees take part of tacit knowledge that otherwise could not be transferred, as suggested by the Agile Manifesto (2001). The most common argument among the respondents which did not include employees, was that it is too time consuming, and that they need to specialise to be efficient. This line of thinking regarding efficiency contradicts Ries’ (2011) claims that multidisciplinary teams focused on learning will reach the end goal faster than those working individually. Eight of the respondents expressed that they divided responsibilities and tasks across team members, which is in line with Duimering, Ran, Derbeneva and Poile (2006) who argue that dividing labour can become necessary when developing something that is complex.

There were 14 out of 19 respondents in the sample who actively shared insights with the rest of the team. All the 14 respondents who shared insights did so on a regular basis, and most of them during weekly or bi-weekly meetings. Many of the respondents who did experiments did so weekly or bi-weekly, which indicates that they are creating tight feedback loops where knowledge is continuously consolidated and shared as suggested by Ingle (2013). The rationale behind the sharing of insights among the respondents was the same as for the employee participation: they argued that diffusing the knowledge across the organisation leads to a better result. This emphasis on knowledge sharing found within the sample is in unison with Brown and Kätz (2009) ideas on encouraging collaboration and mutual learning. Furthermore, it is also in line with Hokkanen and Leppänen’s (2015) arguments that in small entrepreneurial teams, everyone must understand the big picture.

6.3.3 Interpreting Feedback

Out of the 19 respondents in the sample, only 8 discussed some kind of structured impact-effort analysis. Several of the respondents without a structured take on impact-effort evaluation argued for the use of ‘gut feeling’ when deciding what changes to make to their current offering. Furthermore, they argued that customer feedback often is bad, and that one needs focus on the product vision.
This suggests that structured analysis with tools such as impact-effort matrices, as suggested by Ingle (2013), is not widely used within the sample. Like the capital rationing method, as suggested by Schilling (2013), some of the respondents focused on the possible financial outcomes when prioritising feedback, but did not rely on forecasts to do so. Among the 11 respondents who did not use an impact-effort analysis, there was a common notion that all feedback should be discussed internally, however, no structured approach was evident. Several respondents expressed that they had to evaluate each individual situation separately, as the contexts differ, thus suggesting an ad hoc approach to interpreting feedback. An argument that was put forth by most respondents was that one cannot only look at the results of tests, as they can show false positives, or that many incremental changes can steer them away from their product vision. This acknowledgement of the ‘bigger picture’ concur with Ingle’s (2013) suggestion that teams should evaluate each issue in relevance to the surrounding environment. Furthermore, respondents perceived difficulties with receiving constructive and meaningful feedback from customer interactions, which supports the findings of Hokkanen and Leppänen (2015), who argue that the primary rationale for customer interactions should be to understand the bigger picture, as more specific feedback often can be misleading.

In the sample, there were 9 respondents who expressed that they used cohort analysis. The rationale for doing cohort analysis was that it would let the respondents compare different segments to each other, to find which customers and users that were the best fit for the offering or new feature; 6 out of the 9 respondents argued for this. There was one respondent whose primary reason was to compare various features’ relative performance over time with the same segment. Finally, one respondent argued that these two aspects need to be balanced. The respondent’s rationale for using cohort analysis corresponds well with the arguments of Ries (2011): that the primary use of cohort analysis is to find similarities and discrepancies between various segments.

There were 6 out of the 19 respondents who created user stories that would enable them to better understand their users and customers. These user stories were either created from customer cases or from video recordings of users engaging with the offering. The respondents argued that doing user stories is expensive and time-consuming, but that the improved quality of the offering justified it, as it lets them see nuances, and the bigger picture. These 6 respondents use storytelling in a way that is in line with The Interaction Design Foundation’s
(2017) rationale, that a detailed story enables new and deeper insights, and the identification of the users’ emotions in the context.

An emergent finding regarding the evaluation of feedback is triangulation. According to Mueller and Thoring (2012) the Lean Startup heavily emphasises quantitative data and testing, while Design Thinking is mainly qualitative in its approach. There were 4 respondents in the sample who argued that they actively combine qualitative and quantitative feedback in all their decisions, to triangulate their findings. They argued that just relying on one source of feedback is inadequate, which supports Martinsou and Poskela (2001), who argue that mixing qualitative and quantitative data can create a holistic perspective. All the respondents gather both quantitative and qualitative data, but seemingly do not combine them, but rather use one type of data for the specific situation and decision to be made. The finding that all the respondents collect both types of data, but most do not combine them, indicates that Mueller and Thoring’s call to combine Design Thinking and the Lean Startup may be warranted.

6.4 Approach Archetypes
In the analysis of the empirical findings, the authors of the study discovered four archetypes. These archetypes are constructed with the use of shared characteristics of the respondents’ approaches, and their rationale behind their choices. However, worth noting is that even though two respondents might be put into the same archetype, their operations does not necessarily match completely.

6.4.1 The Scientific Approach
Four of the respondents fulfilled what the authors of this study call the ‘Scientific’ approach, and followed the study’s conceptual model closely in their operations. The respondents showed several characteristics that can be found in the Lean Startup and Design Thinking, relating to all the identified elements: Prepare, Execute and Evaluate. Thus, these respondents were identified as having adopted agile methodologies, which is uncommon among start-ups according to Paternoster et al. (2014). At first, the respondents identified assumptions or uncertainties regarding their ideas, and set out to do background research on them, i.e. empathizing, which Dorst (2011) argues to be important for understanding the core problem one is addressing. Once the respondents had emphasized with the customer, they frequently constructed hypotheses with a clear line in the sand, for their acceptance or rejection. Then, they would set up an experiment to test their hypotheses, and often used both qualitative and
quantitative tools; doing so is supported by Ries (2011) as it would let them pinpoint issues and determine its cause and effect. Finally, the respondents would analyse the gathered feedback, to either accept or reject the hypotheses, then repeating this process for new iterations. These three respondents all had a strong emphasis on customer interaction in the product development, and developed their offerings continuously via small iterations. These short iterative cycles are what facilitates speed and flexibility in agile methodologies (Nerur et al., 2005).

6.4.2 The Testing Approach

Eleven of the respondents fulfilled what the authors of this study call the ‘Testing’ approach, and sporadically followed the study’s conceptual model. The characteristics the respondents showed were mainly related to the execute phase in the conceptual model, as they used several of the tools that are suggested in the Lean Startup and Design Thinking. They used some of the supporting activities suggested by these methodologies, and which relate to preparation and evaluation. At first, they identified assumptions or uncertainties regarding their ideas, and just like the scientific approach, first emphasised with customers, to understand the problem better. However, only some of them formed hypotheses of any kind, and did not do so regularly. None of these respondents formed a line in the sand prior to testing; according to Ries (2011) these are crucial components in testing for gaining validated learning. Thus, the respondents learning outcomes from testing may vary in validity from time to time. These respondents all carried out plenty of tests that were designed to gather feedback on new iterations to their offerings. Customer interaction was central, and the feedback together with data from their tests were used to drive future iterations, indicating that the core principles of agile are followed. However, even though they were aware of existing tools in agile methodologies, they did not use several of them, with some even actively choosing to not use them - especially so in the preparation and evaluation phases. To assess tests, the respondents shared the outcomes of the tests among team members; this is supported by Brown and Kātz (2009) who argues that by sharing insights within the team will help the learning process of the company.

6.4.3 The Market Research Approach

Two of the respondents fulfilled what the authors of this study call the ‘Market Research’ approach. The respondents primarily adopted specific elements from the conceptual model related to the gathering of information, such as interviews and surveys, rather than getting feedback on tests. Brown and Kātz (2009) argues that tools that do not let the user to try the
offering, result in a lower quality of data, than if the user were to try the offering. In contrast, Adams, Day and Dougherty (1998) argue that conducting market research can be highly useful, but that it requires the ability to objectively assess information. At first, they would identify a market need, then they developed various solutions to those needs that they showcased to customers and users. By showcasing the suggested solutions, these two respondents could decide which features that were the most promising, and would design their offering accordingly. The respondents had a high involvement by the team members in the process of gathering information, by having them participate throughout the process. This is in line with Giardino et al. (2016), who argue that involving team members in the entire process are beneficial, as it facilitates learning within the company. However, the respondents in the Market Research Approach did not follow other agile principles, such as iterative development and high involvement of stakeholders. Finally, the developed features would be incorporated into their live offering.

6.4.4 The Ad Hoc Approach

Two of the respondents fulfilled what the authors of this study call the ‘Ad Hoc’ approach. The respondents did not follow agile principles that the conceptual model was constructed upon. In the ad hoc approach, new changes to the offering do not stem from the results of testing or experimentation, rather, they are driven by the product vision of the venture. Instead of actively looking to collect feedback, unsolicited feedback played a major part in driving the development. Having such structures are supported by Wirtz et al. (2009), who state that is important to collect unsolicited feedback in service organisations, as services can be improved when designing them around critical stakeholder feedback. Furthermore, a combination of unsolicited feedback and customer requirements from sales meetings helped to drive changes in the offering. Engaging in sales meetings are supported by Ries (2011), as it can be a way of finding out how the customers react to the offering.
7. Conclusion

This section provides a conclusion of the analysis, and answers to the research questions posed in the first chapter. Moreover, suggestions for future research, and implications for practitioners are presented to the reader.

7.1 Empirical and Theoretical Contributions

How do software start-ups approach product-market fit?

This study has outlined various tools that software start-ups use to gather and evaluate information, which can help them iterate and approach product-market fit. Furthermore, it has outlined their rationale for using certain tools. The purpose of this study is to extend the knowledge-base of how software start-ups approach product-market fit with their innovations. Furthermore, it is also to discover their rationale behind their choices.

The results of this study indicate that software start-ups are aware of the tools that are available to them. However, they do not use most of them, and sometimes actively choose to not use them; this was especially clear regarding the portrayed tools in the conceptual model’s elements of preparation and evaluation. Furthermore, the results showed that the tools interviewing, focus groups, observations, and surveys are almost exclusively used on consumers, and not professionals. Moreover, it is argued that it is not only difficult to use them on professionals, but that it might result in biased feedback. Four archetypes could be identified, based on the characteristics of the respondents’ approaches. Firstly, the ‘Scientific’ approach that highly resembles the conceptual model. Second, the ‘Testing’ approach was the predominant archetype, where the respondents have strong stakeholder involvement, and new iterations were tested directly on the market, but elements of the conceptual model are missing. Thirdly, the ‘Market Research’ approach where new offerings and features are built after talking to potential customers. Finally, the ‘Ad Hoc’ approach where changes to the offering primarily stem from the product vision. A common notion was that one should not be too meticulous when working with innovations, e.g., many preferred sales meetings to interviews, and executing new tests rather than preparing and evaluating them. Furthermore, there was a
perceived urgency to quickly reach the market, and it was argued that start-ups lack the resources to use methodologies that let them validate everything before acting. Instead, the respondents argued that such methodologies are better suited for incumbents.

The results of the study provide several theoretical contributions to how software start-ups approach product-market fit. Firstly, the results of the study show that the approaches of software start-ups can be placed in one of four archetypes: The Scientific, Testing, Market Research, and Ad Hoc. Secondly, the results provide further evidence which support previous research, which claims that software start-ups do not adopt traditional or agile methodologies. Instead, they prefer lightweight approaches, and cherry pick elements that facilitate reactivity and speed. However, the study has showed that core agile principles are broadly followed, such as iterative development and high stakeholder involvement, which permeate both the Lean Startup and Design Thinking. Thirdly, the results of this study provide evidence that there is a preference to engage in activities that have a direct and visible impact on the offering and the venture, rather than supporting activities. To adequately prepare and evaluate tests was regarded as cumbersome, counterproductive, and arbitrary. Finally, this study provides evidence that the tools software start-ups should use are dependent on who their stakeholders are. In the prolongation, this would mean that the tools available for close customer collaboration with professionals are fewer, and more limited. Ultimately, this indicates that several tools suggested by the portrayed methodologies are not suitable to use on professionals.

This study has provided results which support previous research, as well as contributing with new insights into the approaches software start-ups choose to use when trying to find product-market fit.

### 7.2 Suggestions for Future Research

In a wider perspective, the authors suggest both quantitative and qualitative studies to further our understanding of the archetypes identified in this study: First, a quantitative investigation of this phenomenon will determine if it is widespread, or due to sample bias. Secondly, in-depth studies will contribute with a better understanding of why it is that software start-ups do not want to, or cannot, adopt agile methodologies. Exploring whether it is so due to shortcomings in the start-ups, or in the methodologies themselves.
Furthermore, software start-ups must always consider the trade-off between saving resources and having accuracy in their operations. Therefore, studies to determine the effect of adopting lightweight and agile methodologies are needed, to understand how they affect software start-ups performance - so that a best practice can be established.

Moreover, research is needed on what obstacles software start-ups might face when using certain tools, such as observations and interviews. By doing so, we might understand which tools that yield the optimal result in different situations. Furthermore, future efforts should try to ascertain if Design Thinking and the Lean Startup should be nuanced, in terms of applicability and scope.

### 7.3 Implications for Practitioners

This study is of value for both start-up founders and advisors to start-ups. For software start-ups, the study shows numerous examples of how one can approach product-market fit in practice. Furthermore, it shows what tools that are available in this process, and what their inherent limitations might be.

For advisors to start-ups such as incubators, this study shows that generic advice from trending methodologies might not be universally applicable. Therefore, caution should be applied when suggesting tools and methodologies to start-ups who approach product-market fit.
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### 8.2 Overview of Execution

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8.4 English Interview Guide

- What is your position within the firm?
- How long have you been with the firm?
- Have the startup received external advice?
  - By whom?
  - Has it affected your decision in any question, or your work-process?
    - If yes: do you have any examples?
- Who did you initially identify as your customer?
  - How was the customer identified?
  - At that time, what size did you estimate the market to be?
    - How did you estimate it?
  - Do you still have the same customer?
    - If no: why?
  - Today, what do you estimate the market-size to?
- What income model do you have?
  - Have you made any changes to it?
    - If yes: what did you base that decision on?
- What did you base the pricing of your offering on in the beginning of the venture?
  - Have it changed since?
    - If yes: why?
- Did you perceive any uncertainties regarding the idea when you started the venture?
  - If yes: what were those uncertainties based upon?
- Are there any uncertainties in your business today?
  - What do you base that decision on?
● If everyone in the team agrees upon something, how do you know that you make the right decision?

● Have you conducted any market tests?
  ○ When? At several occasions?
  ○ What was the reason/reasons that you conducted the tests?

Even if no:

● If survey:
  ○ How was it done? (Google Forms, asking on the street, etc)
  ○ How many participants did you get?
  ○ Who received the survey?

● If prototype:
  ○ How many got to try it?
  ○ Who got to try it?
  ○ Have you added or removed anything in your offering since?

● If landing page:
  ○ what was its purpose?

● If interview:
  ○ How many?
  ○ Who was interviewed? (users or new interviewees?)
    ■ Did you have any prior connections to the interviewees?

● If focus group:
  ○ How many occasions?
  ○ How many participants?

● if observations:
  ○ Who was observed?
  ○ Where did you observe?
  ○ How many observations was done?

● Did you have any formalised assumptions that you wanted to test.. before each test?
  ○ Which were the assumptions?
  ○ How did you know that those assumptions were important to investigate?
  ○ Did you have a pre-defined
  ○ Did you have a clearly expressed threshold for when the assumption would be confirmed or rejected?
- What was that threshold?
  - How did you interpret the feedback that you got from the tests?
  - How did the feedback affect the development of your idea?
  - Did everyone in the team participate in this process?
    - if not: was the information shared with everyone?
- How has the business idea evolved step by step up until today?
  - for example: Have you done any changes to your offering?
    - What did you base that decision on?
  - for example: Have you done any changes to your overall business model?
    - What did you base that decision on?
- Do you any use performance measures for your business today?
  - which ones?
  - which one would you say is the most relevant to you?
    - How did you recognize that it is the relevant to you?
      - was there anything else that contributed?
  - Have you been using the same performance measures over time?
    - Why/ Why not?
    - How have the performance measures affected your decisions?
    - Do you communicate the performance measures to everyone in the organisation?
- How far into the process did you decide that this was an idea worth committing to?
  - What did you base that decision on?
- What is the greatest priority in your work today?
- What is your educational background and prior work experience?
• Have you collected any knowledge about how to act when validating an idea for a business?
  ○ How? Where? When?
• Is there anything that have not been mentioned in the interview that you believe have been important for us?

8.5 Swedish Interview Guide

• Vad är din roll inom företaget?
• Hur länge har du varit med i företaget?
• Har ni fått någon extern rådgivning?
  ○ Av vem/vilka?
  ○ Har det påverkat era beslut i någon fråga eller er arbetsprocess?
    ■ Om ja: Har du något exempel där de fick er att tänka om?
• Vem identifierade ni ursprungligen som en kund till er lösning?
  ○ Hur identifierade ni kunden?
  ○ Hur stor uppskattade ni marknaden till att vara?
    ■ Hur kom ni fram till det?
  ○ Har ni samma kund än idag?
    ■ Om Nej: Varför?
  ○ Om Nej: Hur stor uppskattar ni er marknad till idag?
• Vad har ni för intäktsmodell?
  ○ T.ex. Har ni gjort några förändringar i er intäktsmodell?
    ■ Vad baserade ni det beslutet på?
• Vad baserade ni prissättningen av ert erbjudande på till en början?
  ○ Har prissättningen ändrats? Varför?
• Såg ni någon osäkerhet kring idén när ni startade upp?
  ○ Om ja: Vad grundades osäkerheten i?
Finns det några osäkerheter kring er verksamhet idag, eller anser ni att ert erbjudande är precis det er kund vill ha?
   ○ Vad baserar du det beslutet på?
   ○ När ni alla är överens om en fråga, hur vet ni att det är rätt beslut?

Har ni genomfört några marknadstester?
   ■ När? Flera gånger?
   ■ Vad var skälet till att ni utförde testet/testen?

Även om nej, ge förslag:

   ● Om enkät:
      ○ Hur gjorde de den? (Google Forms, formulär på stan, etc)
      ○ Hur många respondenter fick ni?
      ○ Vilka fick enkäten?

   ● Om prototyp:
      ○ Hur många testare?
      ○ Vilka fick testa?
      ○ Har ni lagt till eller tagit bort något i erbjudandet sedan dess?

   ● Om landing page:
      ○ vad var syftet?

   ● Om intervju:
      ○ Hur många intervjuer gjorde ni?
      ○ Vilka intervjuade ni? Användare och nya?
      ■ Hade ni någon relation till dem ni intervjuade?

   ● Om fokusgrupp:
      ○ Hur många tillfällen?
      ○ Hur många deltagare

   ● Om observationer:
      ○ Vilka observerade ni?
      ○ Var observerade ni?
      ○ Hur många observationer gjorde ni?

      ■ Hade ni uttalade antaganden ni ville testa ... innan varje test?
      ● Vad för antaganden?
      ● Hur kom ni fram till att just de antagandena var viktiga att undersöka?
Hade ni en tydlig gränsdragning mellan att acceptera eller förkasta ert antagande?
- Vad?

- Hur gick ni tillväga för att tolka feedbacken från testen?
- Hur påverkade feedbacken utvecklingen av er idé?
- Var alla i teamet delaktiga i den processen?
  - Om inte: Delades informationen med alla?

- Hur har affärsiden utvecklats stegvis fram tills idag?
  - T.ex. Har ni gjort några förändringar i ert erbjudande?
    - Vad baserade ni det beslutet på?
  - T.ex. Har ni gjort några förändringar i er övergripande affärsmodell?
    - Vad baserade ni det beslutet på?

- Använder ni er utav några prestationssätt idag? (Hur ni mäter framgång eller utveckling inom verksamheten)
  - Vilka?
  - Vilket prestationssätt är mest relevant för er?
    - Hur kom ni fram till att det var den mest relevanta?
      - var det något annat som bidrog till att ni ansåg att det var mest relevant?
  - Har ni använt samma prestationssätt över tid?
    - Varför/varför inte?
    - Hur har prestationssätten påverkat era beslut?
    - Kommuniceras prestationssätten till samtliga i verksamheten?

- Hur långt in i processen beslöt ni er att detta var en idé värd att satsa på?
  - Vad baserade ni beslutet på?

- Vad är er STÖRSTA prioritet i dag i ert arbete?

- Vad har du för bakgrund? Utbildning samt arbete.
Har du hämtat in någon kunskap om hur man bör agera när man validerar en affärsidé?
   ○ Hur? Var? När?

Något annat, som inte tidigare är nämnt, som du tänker på?

8.6 Search Keywords

To find relevant literature that would aid the research purpose, databases for scientific publishings were used. The databases used where: ‘SuperSearch’ at the Gothenburg University Library, Scopus, Web of Science and Google Scholar. Complementing sources of information, were material on websites and industry reports relevant to the topic of this study, found via Google Search.

9. Bibliography


Retrieved from http://nsuworks.nova.edu/tqr/vol8/iss4/6

Hasso Plattner Institute, (n.d.). *An Introduction to Design Thinking PROCESS GUIDE*. 1st ed. [PDF] Institute of Design at Stanford. Available at:


