User Research in Startups

How entrepreneurs can develop products of superior user value

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7 August 2015

Pages: 78
Characters: 181,725

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Copenhagen Business School 2015
MSoc.Sc. Organizational Innovation and Entrepreneurship

Abstract

Bruger-research i startups: Hvordan iværksættere kan udvikle produkter af høj brugerværdi

Ud af de mange startups der bliver stiftet hver dag, er der kun en lille procentdel der opnår markedssucces. En af grundene til dette er, at disse virksomheder udvikler produkter, som der ikke er nok mennesker, der har lyst til at bruge. Derfor er det berettiget at antage, at iværksættere kan øge deres chance for succes, ved at udvikle produkter som er karakteriserede af høj brugerværdi. Eksisterende research indenfor produktudvikling og bruger-research har dog primært fokuseret på større og veletablerede virksomheder. Siden der er mange forskelle på etablerede virksomheder og startups, kan det antages, at iværksættere kan gøre brug af andre metoder og tilgange end sin større modpart. Denne opgave søger derfor at svare på:

Hvordan kan iværksættere effektivt lære om brugerbehov for at skabe produkter af høj brugerværdi?

For at besvare dette spørgsmål gør denne opgave brug af akademiske tekster og teorier samt erfaringer og meninger fra både iværksættere og eksperter indenfor bruger-research.

Den første del af opgaven lægger det teoretiske fundamentet for analysen. Denne del fremlægger forskellene mellem startups og etablerede organisationer og det bliver forklaret, hvad disse betyder for hvordan iværksættere kan tilgå produktudvikling og informationsindsamling. Brugerværdi bliver også defineret og det bliver forklaret hvordan ens definition af dette begreb påvirker måden man kan lære om det på, og dermed også hvilken type innovation man kan opnå. Slutteligt bliver det undersøgt hvordan iværksættere strategisk kan gribe læring om brugerværdi an gennem en markeds- og entreprenørisk orientering. Alt dette bliver kombineret til at udgøre en strategisk og taktisk tilgang til læring om brugerværdi, der kan benyttes af iværksættere.

Selve analysen omhandler den praktiske tilgang iværksættere kan tage og er baseret på empirisk data. Det empiriske grundlag udgøres af 12 dybdegående interviews med otte iværksættere og 4 bruger-research eksperter. Disse to forskellige typer informanter besidder komplementær viden, der supplerer hinanden på en måde der gør det muligt, at besvare ovenstående problemformulering.

Deres indsigter og perspektiver har til formål at diskutere nyttige research metoder, der kan bruges til at identificere og validere brugerbehov samt mulige løsninger. Eksperternes viden bruges til at bygge bro mellem det akademisk teori og iværksætternes praktiske erfaringer.

Opgaven konkluderer, at iværksættere kan drage fordel af at lære om brugerværdi allerede fra de tidlige faser af produktudvikling, samt af at være strukturerede i deres undersøgelser af brugerbehov og implementeringen af dette i deres produktudvikling. Denne tilgang, hvor man kontinuerligt træffer produktudviklings-beslutninger baseret på ægte brugerbehov, vil mindske risikoen for at fejle og samtidig resultere i bedre produkter.

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Chapter 1: Introduction

In the world of startups there is one overarching problem: Out of the many companies started every day, only a small percentage ever achieve market success (Marmer et al 2011). This means that many entrepreneurs end up spending their time, money, and effort on failures. There is no cure-all solution to this problem, however, it might be possible to increase the chances of success.

Startups fail for a variety of reasons, but according to unsuccessful entrepreneurs themselves the main reason is simply that there is no market need for their product (Griffith 2014). That is, two out of every five unsuccessful startups failed because they had developed products that not enough people wanted to use. This is supported by research that reveals the top reason for new product failures to be inadequate market analysis (Cooper 2001). While these numbers might not show a complete truth, they do indicate a clear tendency: Many entrepreneurs do not have a sufficient understanding of what constitutes value to their potential users and therefore develop products that do not deliver superior user value (Mueller & Thoring 2012). It thus seems likely that more startups would become successful if entrepreneurs would place user value at the core of their product development strategies (Wong 2012). This entails discovering user problems, formulating solutions, and building these into products that users will appreciate. However, many entrepreneurs are unaware of how they can practically base their product development efforts on the needs of the market (Kristensson et al 2008). The research question of this paper therefore is:

How can entrepreneurs efficiently learn about user needs to create products of superior user value?

In order to answer this question, insights and experience from entrepreneurs and user research experts will be used to discuss useful approaches and methods for discovering and validating user needs and possible solutions. Thus, the focus of this thesis will be on the early stages of new product development (NPD) in startups.

Chapter 2: Method

This chapter will present the scientific framework of this thesis in order to explain how the research question will be answered. This will include a presentation of the scientific stance of this paper; an introduction of the informants; a description of the research approach; and an overview of the most relevant academic literature, all with the purpose of evaluating the trustworthiness of the findings and explaining what type of answer can be expected. But first, the structure of the thesis will be presented.

2.1 Structure

The structure of the thesis will be presented first, in order to illuminate how the entire thesis works towards answering the research question. The most convenient way of doing this is by use of Table 1.

Table 1: Structure	
Chapter	**Purpose**
1: Introduction	Introduce the topic of this thesis.
2: Method	Describe how the research question will be answered and demonstrate the trustworthiness of the findings.
3: Early stage product development in startups	Describe the characteristics that distinguish startups from established companies and discuss how these affect their possibilities for integrating user value learning in their NPD activities.
4: User value	Define user value and discuss how the definition affects the kind of knowledge that can be collected.
5: Strategic approach	Evaluate certain strategic orientations' influence on new product success with the purpose of formulating recommendations for how entrepreneurs can approach user value learning on a strategic level
6: Practical approach	Discuss diverse user research techniques with the purpose of explaining their usefulness for entrepreneurs. This will function as a practical toolbox for how entrepreneurs can identify user needs and ways to satisfy these.

7: Discussion	Discuss how entrepreneurs can engage in continuous user value learning and integrate this into decision-making throughout the NPD process.
8: Conclusion	Summarize the thesis and its findings.

While Table 1 is a convenient representation of the structure of the thesis, a few additional things should be understood: Chapter 3, 4, and 5 are concerned with answering the research question from a purely academic perspective. This will also provide a theoretical background on which to interpret and evaluate the empirical data. When the findings from these three chapters are combined it describes a framework for how entrepreneurs can think about user value and integrate it into their product development processes on a tactical level. Chapter 6 is where the empirical data is introduced and analyzed. This chapter will combine insights from entrepreneurs, user research experts, and theory to describe how entrepreneurs can learn about user value. The final chapter is a discussion, which means that it is mainly based on data that has already been introduced and is, by nature, speculative.

Having presented the overall structure and argumentation flow of the thesis, it is relevant to explain in more detail how the research question will be answered.

2.2 Scientific paradigm

In order to give a useful answer to the research question it is paramount to be aware of the underlying interpretation of the question. This is because the usability of the answer is dependant on the way the question is understood, because this understanding affects the way in which the answer can be found. Therefore, the worldview underlying this thesis will be presented to make it clear what the reader can expect to gain from reading it. Briefly put, this thesis takes a largely constructivist stand and this section provides insights into the ontological, epistemological, and methodological elements of this scientific paradigm as well as how these affect the research approach and findings of this thesis.

2.2.1 Ontology

The first relevant aspect is ontology, which is concerned with the nature of reality. That is: in what sense things can be said to 'be' (Guba & Lincoln 1994). The most pertinent consideration here is the belief in 'truth'. Some researchers strive to uncover absolute truths, while others argue that no universal truths exists. The author of this paper is placed in the latter category, and thus takes a relativist stance to ontology, where it is believed that some constructions are, if not more true, then more sophisticated than others (Ibid). Therefore, the research question will not be answered in a definite once-and-for-all way. The paper does not attempt to do this. Rather, it strives to provide some conclusions and recommendations that are the best possible answers based on the knowledge at hand and the interpretation of the research question itself. This lack of belief in a universal truth is evident in the phrasing of the research question: "How *can* entrepreneurs efficiently learn about user needs to create products of superior user value?". If it was believed that a universal answer existed the auxiliary 'should' should have replaced 'can'. Had the research question been phrased this way, a positivist paradigm would be required to find an answer. This would result in a very different type of study, which would have been dependent on statistically significant examination of all factors relating to user research and startups (Ibid).

2.2.2 Epistemology

Epistemology concerns the conditions under which knowledge is created. In this way, it is concerned with the relationship between that which can be known and the potential knower and thus sets the frame for scientific procedures (Guba & Lincoln 1994). The epistemological stand taken is strongly connected to the ontological one and will thus also be visible throughout the paper, as it is reflected in the choice of research question, theories, method, and analytical perspective. Above it was mentioned that this thesis will not provide a go-to manual that everyone can use successfully. A reason this is not possible is that the findings of this thesis are literally created during the investigation, as a result of the interaction between the researcher and the object of investigation (Ibid). In other words, the findings are unique to this thesis, because they are affected by the situation from which they came. Thus, the choice of believing in the paper as an applicable truth is left to the reader. It cannot be *known* that the recommendations arrived at herein are true for every similar situation, it can only be believed (Ibid). It is possible for a person to test the claims by applying the

findings to a specific situation but the results will neither validate nor invalidate the findings of this thesis. In this way, this thesis will explain and discuss certain aspects of user research that seem to have an influence on successful NPD, and entrepreneurs can use this as a framework for their own product development efforts, if they consider it to be likely to be applicable to their specific situation. The conditions under which knowledge was created for this thesis and the transferability of the findings will be discussed in section 2.3.

2.2.3 Methodology

The above described what knowledge this thesis will result in and how this knowledge can be created. Methodology concerns the approach taken to actually create this knowledge and thus answer the research question. In this thesis, a qualitative approach consisting of in-depth interviews is taken, the implication of which is that the methodology is hermeneutical and dialectical, as is characteristic of the constructivist paradigm (Guba & Lincoln 1994). This means that the knowledge created in the social interactions between the researcher and the respondent is interpreted through hermeneutical techniques and evaluated through a dialectical interchange (Ibid). This sounds quite complex but its meaning for this thesis is simple: The approach taken to answer the research question is to understand the selected respondents through dialogue and evaluate their insights based on the contextual factors and social constructions present. This will be used to formulate informed recommendations for entrepreneurs. In this way, the research approach can be said to be inductive, because the collected data aims to make predictions that can be useful in similar situations (Hayes et al 2010). This is in opposition to the deductive approach, the goal of which is to confirm pre-established hypothesis.

This qualitative approach entails very different methods and findings than a quantitative approach would have done. To continue the positivist example from before, a typical positivist approach be to survey a large amount of entrepreneurs on their use of user research methods and then evaluate these methods based on the success of the developed products in order to find an answer based on enough evidence to be considered a truth (Chalmers 1999). In accordance with the ontology of this thesis, such a truth can not be found and this way of looking for an answer does thus not provide a very sophisticated answer. Instead, a qualitative approach is preferred because it provides more detailed and useful insights. There are off course also several limitations to qualitative methods and

these will be described in the following section, which will elaborate how the methodology is manifested in the research approach.

2.3 Research approach

The above has introduced the philosophical considerations underlying this thesis and has argued how these manifests themselves in the scientific approach to answering the research question. However, so far, this has taken place on a very theoretical and somewhat abstract level. This section will describe the research approach taken and explain how the methodology is manifested within in to demonstrate how the research question will be answered on a more practical level.

2.3.1 The choice of research approach

While it has been established that a qualitative research approach will be the most useful for answering the research question, the decision to use in-depth interview has not explained. It is possible that other qualitative methods could provide better answers. This section will explain why in-depth interviews were found to be the best method by describing the considerations behind choosing it.

It was contemplated that a case study might be a useful approach for this study, because it is a useful method for providing very detailed insights into a specific organization or project (Yin 2009). However, using a single case study was considered to limit the applicability of the findings, because the generalizability of the findings would be limited by too many case-specific factors, such as the budget and size of the studied startup. In this way, the findings would not be useful to enough entrepreneurs. A solution to this could be to make use of more case studies. Studying three diverse startups could make the findings more generally applicable. However, this would still leave the question of who would be the objects of the study. Because while this paper is based on the premise that efficient user research increase the chance of achieving success in a startup, this does not mean that successful startups are ensured to have done efficient user research (Chalmers 1999). That is to say, there is no clear causality between the way entrepreneurs have done user research and the success they have had. Therefore, it would be hard to identify startups whose user research methods could be trusted to be efficient for discovering user value. This lead to the alternative that the cases studied should not be

startups, but rather research consultancies with expertise in product development for startups. However, such consultancies are rare and the author of this paper could not gain access to such a source. For this reason the case study method was discarded because the sophistication and transferability of the findings would suffer.
However, the concept of gathering data from research experts and from startups remained unchanged and a good way of doing this is through in-depth, 1-on-1 interviews. These are useful for answering 'how' and 'why' questions and for collecting detailed information about the experiences and viewpoints of both entrepreneurs and research experts (Turner 2010), as well as for learning about their behavior in specific situations and the reason behind these (Boyce & Neale 2006). Interviews also have the advantage over case studies that it is possible to perform more of them in order to establish a trend in the information. This should not be understood as a statistically significant trend, but rather as a way to avoid basing conclusions on a few unrepresentative cases. It was thus found that qualitative, in-depth interviews with entrepreneurs and user research experts would, when combined, provide a strong foundation for giving a sophisticated and generalizable answer to the research question. Naturally there are some weaknesses related to this approach and these will be explained and elaborated throughout the remainder of this chapter as the practical aspects of the data collection are presented.

2.3.2 Informants

This section will present the informants and discuss their usefulness for answering the research question. The primary research of this study consists of 12 1-on-1 interviews. Eight of the informants are entrepreneurs and four can be considered experts on user research. These two groups of informants provide two different perspectives on user research in startups which will help answer the research question. Put shortly, entrepreneurs' experience and opinions provide a practical perspective on user research in startups and the expertise of the research experts are useful for building a bridge between this and the academic literature.

A short introduction to each informant can be seen in Table 2. Should a more detailed description of them and their experience be required, this can be found in Appendix 1 along with summaries of all the interviews. The following is a detailed description of the two groups of informants and a discussion of what value they add to this study.

Table 2: Overview of informants			
#	**Name**	**Position**	**Relevance for thesis**
E1	Alex Dagil	Co-founder: Nabby	Entrepreneur + usability award winner
E2	Louise Ferslev	Founder: MyMonii	Novice entrepreneur
E3	Emil Sørensen	Co-founder: FitDo	Novice entrepreneur
E4	Kenneth Francke	COO: Scan Unic	Serial entrepreneur
E5	Erdem Ovacik	Co-founder: Donkey Republic	Serial entrepreneur
E6	Niklas Stephenson	Co-founder: Firmafon	Serial entrepreneur
E7	Patrik Schär	Co-founder: NAU	Novice entrepreneur
E8	Troels Thorbjørnson	Co-founder: Spant Studio	Novice entrepreneur with design-focus
X1	Nanna Gelineck	Usability specialist: Adapt	Expert on qualitative research methods
X2	Kirsten Grønborg	UX researcher: Unity	User research in established company
X3	Frederik Bundgaard	Founder: UX Mentor	Consultant for companies and startups
X4	Lene Karup	Self-employed UX Consultant	UX expertise and design-focus for SMEs

Entrepreneurs

The first group of informants consists of eight entrepreneurs, who have relatively recently started a company and are currently working on developing a product. All of these products are being invented and designed from scratch, which is why these entrepreneurs have either made use of user research or have decided not to. The entrepreneurs work in different sectors: some of them develop software and some develop physical products. They also have different levels of experience since some of them are developing their first product, while others are engaged in their third startup venture. It can be argued that this diversity among the subjects makes the thesis too unspecific. However, this diversity

improves the transferability of the findings and thus make them more applicable to entrepreneurs in general.

It is paramount to understand that the entrepreneurs' success is not what makes them relevant for this thesis: They are not expected to directly answer the research question of how to learn about user value. Rather, they are used to provide insights into the research concerns and opinions that exist in startups: How is user research handled, what priority is it given, what are the obstacles for conducting user research et cetera[1]. It is their opinions on user research and user research methods that are important, not how they recommend others to do research. Understanding these elements is the first step in being able to answer the research question.

User research experts

The other group of interviewees consists of people who can be considered experts on user research. All of these respondents have user research as part of their job description and their professional titles include 'user researcher', 'UX consultant', and 'usability specialist'. As can be seen from Table 2 they all work in different contexts, ranging from startups to internally in large organizations. The reasons for preferring different types of user researchers is that their educational and professional backgrounds can provide diverse insights which are all equally useful for learning how user research should be conducted.

Most of these experts refer to themselves as "UX'ers". UX is an abbreviation of User Experience and the profession is sometimes understood to be merely relevant within IT. However, the understanding of UX to be a software-specific profession is too limited. UX can be roughly separated into Research and Design, and both of these are relevant for any kind of innovation. While the latter is, naturally, design-related, the former is hugely relevant for this thesis, since it concerns how to discover what constitute value to users. And, as will be evident from chapter 6, the research methods applied by UX'ers are not limited to software products. Therefore, UX experts are among the people who knows most about how to efficiently collect good and usable data about user needs.

One limitation of listening to user research professionals is that they might be biased by their profession. That is, they might not be able to look objectively at the value of their trade. However, since their insights are used to talk about *how* to conduct user research more than about the value of

[1] The interview guide for entrepreneurs can be seen in Appendix 2.

doing so, this will only be a minor limitation for the findings. Another critique of the experts could be that their expertise might not extend itself to a startup context. Two measures have been taken in response to this limitation: First of all, three of the four experts were chosen because they have experience that relates directly to entrepreneurship. The fourth was chosen on the basis of her ethnographic expertise. Secondly, the research experts are not expected to provide insights on how *entrepreneurs* can learn about value, but about user value learning in general. This means that their insights provide the second analytical step in answering the research question.

The combination

It has been described how each of the informant groups can be expected to provide insights that are relevant for part of the research question. It has also been explained what they can not be expected to be helpful for. And this is exactly why both types of informants are needed: The knowledge they offer compliments each other and can thus be combined to give a satisfactory answer to the research question. This combination can be considered the third and final step of the analysis.
This explains why it has been prioritized to interview few people from both groups, rather than interviewing more from just one group. This might mean that not all relevant aspects are discovered, but the benefits of the combination were given higher priority than the potential discovery of a few extra relevant factors. To summarize this approach: the research experts are interviewed because their insights can serve as a link between the academic world of scientific journals and the practical world of startups, the latter of which will be understood through the insights of entrepreneurs.

2.3.3 Conducting the research

This section will describe the low-level practicalities of how the research for this thesis was conducted. This will include a description of all the factors affecting the collection of primary data and will serve to make the research process explicit. The purpose of this is to strengthens the trustworthiness of the findings, which will be the topic of the next section. For ease of understanding, the factors will be presented in the narrative in which they took place.

First of all, the potential informants were contacted through either email, linkedin, or facebook. They were given a brief introduction to the interview topic before they agreed to participate. This means that they had time to give consideration to what to expect from the interview and which insights to

share (Kvale 1997). This is likely to have had an effect on the collected data, however, it is assumed that this effect is positive, in the form of more well-prepared and well-considered answers. It should also be mentioned that the respondents were offered no incentive to participate in the interview, apart from a cup of coffee and the option to read the finished thesis. This is relevant because the informants' reasons for participating might have an influence on the collected data. Since no extrinsic motivation was offered it seems likely that only people with an actual interest in the topic participated.

The next step was the preparation for the interviews. It was decided prior to the interviews what topics should be addressed, and two interview guides were prepared: One for each type of respondent. These can be seen in Appendix 2 and 3. These interview guides were constructed in a way that allowed the researcher to take a semi-structured interview approach. The reason for this approach was that it allowed the interviewer to probe in the areas in which the specific informant had useful knowledge (Turner 2010). For instance, as explained, the research experts all had different areas of expertise and the interviews had to be adjusted to exploit this. This could not have been achieved with a structured interview guide, and this is one of the strengths of this approach. It also means that the findings from each interview are not comparable (Boyce & Neale 2006), however, since the purpose of this thesis is to formulate theories rather than proving hypothesis this does not constitute a problem. It should also be stressed that all 12 interviews were scientific interviews, in the sense that they were controlled by a researcher, who critically sought for relevant answers and insights to a pre-decided topic (Kvale 1997).

During the actual interviews, care was taken to create an atmosphere that would make the respondent feel comfortable. For instance, the interviewees decided where the meetings should take place, which meant that most meetings took place in cafés or in the respondents' place of work. The rest were carried out over phone or through skype. Another example of how they were made to feel comfortable is found in the way the interviews were conducted. They were not only semi-structured, they also adhered to the principles behind the 'conversation interview'. With this approach it is possible for the informant to ask the researcher questions, and in many ways it is reminiscent of everyday conversations, with the exception that the researcher follows a pre-decided agenda (Kvale 1997). This worked well because it strengthened the informal atmosphere of the interview situation, which made the informants more likely to share true information, even when this might be embarrassing to them. This rather informal approach also affected the social constructs.

Social constructs is another factor that influence the collected data and it is therefore relevant to describe the social role taken by - and given to - the researcher. Generally, the researcher was introduced as a master's student with a more-than-basic understanding of user research and entrepreneurship. Contact to all the research experts were made directly at various topic-specific conferences and networking events, whereas most entrepreneurs were found in the startup environment that the researcher had recently belonged to. In this way, all the informants considered the researcher as belonging to their own community, but not being at their personal level of expertise. In extension of this, the researcher took on the role of an apprentice (Wadel 1991). It is possible that this made research experts more willing to share their tricks-of-the-trade, while it made entrepreneurs more open about their successes and failures. However, it is also possible that the opposite is true, and both type of informants used their position of authority to exaggerate their personal expertise.

The final step was the post-interview analysis. A digital audio recorder was used to record all the interviews, which were then transcribed into text-form. Almost all content was transcribed, except for repetitions or those topics that were clearly outside the scope and interest of the analysis. All the interviews are enclosed to the thesis, so that it will be possible to ensure the reliability of the data. These recordings can be found in Appendix 1, E1-E8 and X1-X4, as explained in Table 2. The majority of these interviews were conducted in Danish, so translation and interpretations errors might have occurred. Naturally, the interpretation of the data is the responsibility of the researcher so it is possible that a different researcher would have understood the data differently even though an effort has been made to omit subjectivity from the analysis.

In general, the interviews are considered to be of high value because they provide insights that are tailored for the specific purpose of this thesis. These insights could not have been found in existing literature. The primary data is thus free from some of the limitations of the secondary research, some of which is older or only suitable to certain geographic areas. This sums up the description of the research situation, which, as explained, is a precursor to the following section on research quality.

2.3.4 Quality and trustworthiness

It is the object of science to present findings in an objective way and therefore it is relevant to evaluate the quality of the inquiry (Guba & Lincoln 1994). The above has attempted to explain the

pros and cons of the research approach and as part of this, some factors influencing the quality of the study has been presented. This section will give a more focused evaluation of the quality of this paper. This evaluation will be based on the trustworthiness criteria as described by Guba & Lincoln which involves credibility, transferability, dependability, and confirmability (1994).

Credibility

Credibility refers to the rigor in the research process and in communicating this to others (Morrow 2005). The credibility of this study is primarily based on the data saturation and through the thorough description of the source data. The source data is enclosed in the appendices, as described in Table 2, and the above section gave a detailed description of how it was collected. The data saturation is achieved by interviewing a relatively high amount of informants, considering the qualitative approach of the study. Care was taken to interview enough respondents to make the collected information become repetitive. Repetitiveness across interviews was taken as an indication that a sufficient amount of informants had been interviewed to present a trend. Possibly the information gathered would have been different if other, or more, informants had been included. However, the interviewees chosen are believed to be representative of their peers.

Transferability

This is also known as generalizability, and is what enables the reader to decide to what extent the findings can be transferred to other situations (Morrow 2005). First of all, it should be stressed that this thesis does not attempt to describe to which settings the findings can be generalized. However, it is the hope that the findings will be useful to entrepreneurs that are in situations similar to the interviewed entrepreneurs. In order for readers to evaluate the transferability of the findings, they need to know the details about the research context and processes, as well as about the informants, the researcher, and the relationship between these (Morrow 2005; Hastrup 2010). All of this has been described in the above and a more detailed description of the individual informants can be found in Appendix 1.

Dependability

Dependability can be measured as the extent to which other researcher will be able to make use of the same procedures and arrive at the same conclusions as this thesis does. It thus requires that the

research process is explicit and as repeatable as possible (Morrow 2005). In order to achieve this, an audit trail has been kept. That is, the research process has been described in detail above and it has been made clear which factors may have influenced the collected data. Furthermore, a chain of evidence is established throughout the paper by clearly referring to the original source every time new information is presented. Furthermore, multiple sources of evidence are used in the combination of diverse secondary research and interviews with both experts and entrepreneurs. Thus, the thesis can be said to be organized in a way that makes it possible for readers to retrieve any information from the original source and to repeat the research process, should they be so inclined.

Confirmability

It must be acknowledged that research can never be completely objective, and for this reason great care must be taken to make the findings represent the actual situation, rather than the beliefs or biases of the researcher (Morrow 2005). It was just described how this thesis has included a trail of evidence. This will also be useful for evaluating the confirmability of the findings. Another relevant aspect is how the researcher managed subjectivity. This was done to the greatest extent possible. An example of how confirmation bias was avoided is that no assumptions are made about entrepreneurs' opinions on user research; they were simply asked to describe their relation to it. Furthermore, the strengths and weaknesses of the research approach has been described and evaluated throughout this chapter. Ultimately, it is up to the reader to confirm the adequacy of the findings. This section has explained how care has been taken to tie together the data, analytical processes, and findings in a way that supports the trustworthiness of the conclusions.

2.5 Theoretical Framework

So far a lot of attention has been given to the primary research of this paper but that does not mean that secondary research does not play an important role. In fact, this thesis is based on an abundance of secondary research consisting of a mixture of qualitative studies and quantitative studies as well as meta-analyses and theories found in academic books, scientific articles, and online management and science journals. When combined this secondary data provides a strong theoretical understanding of user value learning for entrepreneurs, which will serve as the foundation for the analysis and thus make it possible to give a sophisticated answer to the research question. Research carried out by

academics and the theories they propose are highly useful for describing user value learning and product development processes for startups. This section will briefly introduce those theorists with the largest influence throughout this thesis.

First of all, Saras Sarasvathy's theory of effectuation and causation is very useful for describing some of the differences between startups and established organizations, and the same is true for Berends, Jelinek, Reymen, and Stultiën's article on product innovation processes in small firms, so these two play a large role in chapter 3 on this topic.
When defining user value in chapter 4, this thesis draws a lot of inspiration from Axel Rosenø's PhD dissertation on customer value driven product innovation, but many other academics are also involved. This includes Woodruff and Gardial as well as Ulaga and Chacour who have provided different definitions of user value.
The fifth chapter makes extensive use of literature concerning strategic orientations. The meta-study carried out by Henri Hakala is central to the understanding of strategic orientations in general, whereas the specific orientations are described through other researchers: Market orientation is explained through the groundbreaking work of Narver and Slater as well as Kohli and Jaworski, whereas the entrepreneurial orientation is primarily explained through the work of Stanley Wong and Jalali, Mastura, and Thurasamy. Furthermore, many other studies concerning strategic orientations' effect on new product success is included in this part of the paper.
Chapter 6 on user research techniques is mainly based on the primary data but benefits from a variety of academic sources as well, some of which have already been mentioned. Especially useful for this analysis is the study of market research methods and their perceived effectiveness in NPD, written by van der Hoven, Michea, Varnes, and Goffin. Leonard and Rayport as well as Houde and Hill's work on prototyping is also very useful for this section. Apart from this, this chapter is based very much on the primary research, as is the discussion in the final chapter.

Throughout the presentation and discussion of the secondary research, care has been taken to include only relevant studies and theories. However, this does not mean the analysis will become biased. Theorists with divergent opinions and studies with mismatching results are included and discussed throughout the thesis in an effort to avoid confirmation bias. In this way, a critical analytical distance is taken in order to not promote only one side of the story.

2.6 Delimitations

As explained, there are many ways to answer the research question and many different answers exist that can be considered equally correct. However, since it is not possible to uncover all of these answers within a single research paper, certain elements that could be considered relevant have been omitted from this thesis. The following will briefly describe these omitted aspects and what their absence means for this thesis.

First of all, it should be understood that 'startups' in this thesis refers to new ventures characterized by a high degree of innovativeness and scalability. In extension of this 'entrepreneur' refers to the people involved in such ventures. For this reason the findings will be less of interest to self-employed people in other types of companies, such as freelancers, consultants, or carpenters.
Furthermore, the thesis is focused primarily on a specific point in the product development process: The point where the product idea exists but has not been validated. In popular entrepreneurship literature, this is known as the Customer Discovery Stage (Blank 2007). The focus on this stage is based on the assumption that entrepreneurs usually know approximately what they want to create and sell and thus have skipped, or already gone through, the ideation phase. For this reason, very little will be said about the idea-generation phase in this thesis. The focus on the very early phases of product development does not, however, mean that the user value learning approach and research techniques discussed are not useful for later development stages, but it is possible that some of them should be applied differently. Talking about stages of product development, it is relevant to mention that this paper does not make any reference to NPD process models in general. While these are relevant to NPD and gives recommendations on when to use which methods, they are not considered relevant to be relevant for giving a useful answer to the research question, as will be explained in chapter 3. In extension of this focus on startups, it should also be mentioned that other aspects that might improve product development and learning in larger organizations will not receive much attention in this paper. This includes aspects such as team composition and cross-functional cooperation. In general, this paper will give special attention to solutions that are relevant for entrepreneurs with very limited personnel and capital. However, it can be assumed that more established organizations can also benefit from this paper, as long as they notice which elements of it

also applies to them. The next chapter will be helpful for understanding how the differences between startups and established firms influences their possibilities for integrating user value learning in the development of new products.

Chapter 3: Early-stage product development in startups

While the majority of this thesis will be concerned with user value and how to uncover it, it is prudent to also consider the other part of the research question: entrepreneurs. The reason the scope of this paper is limited to startups is because there are some fundamental differences between small and larger companies which affect the product development and data collection processes available to them. This chapter has the purpose of presenting these differences and discussing what they might mean for how an entrepreneur should approach user value discovery and integration. The chapter will be divided into three parts:

1) How startups are different
2) Causation and effectuation
3) What this means for entrepreneurs' NPD process

3.1 How startups are different

A lot of research has been conducted on NPD. However, most of this research is concerned with established organizations and does not distinguish between these and startups (Berends et al 2014; Welsh & White 1981). At first glance, it might seem likely that the well-respected NPD process models that are already in existence, such as Cooper's famous Stage-Gate Model (Cooper 2001), can be directly applied by any type of company. This, however, is not actually the case. This section will demonstrate how startups are different from larger and more established organizations, which will be the foundation for the following argument, that startups could benefit from engaging in different data collection methods and product development processes.

As mentioned, not much of the academic literature on product development is concerned specifically with startups. Therefore part of this sections is based on literature on small companies, to the extent these were seen to share relevant characteristics with startups. The lack of specific research suggests that academia has to some extent failed to distinguish small companies and startups from large corporations (Moultrie et al 2007) even though it is acknowledged in academia that startups are not

simply small versions of large companies (Welsh & White 1981) and that the two operate in different contexts (McGrath & MacMillan 1995). Because of this lack in research, little is known about small companies' product innovation processes (Edwards et al 2005). An exception to this it Berends et al's study of product innovation processes in small firms (2014) upon which much of the following argumentation is based. The authors explain how product innovation in small companies, in practice, differs from the best practices in larger companies. Their literature review on the topic found that "*small firms do not deploy the formalized processes identified as best practice for the management of new product development (NPD) in large firms*" (Berends et al 2014, p. 616). Furthermore the authors stress that the differences between the two kind of companies constitute certain limitations and possibilities for product development in startups (Berends et al 2014). The main differences will be highlighted here in order to analyze how these may influence an optimal product development strategy.

On an overall level it can be said that large organizations have the advantage in terms of resources and material factors, whereas small companies have a behavioral advantage (Edwards et al 2005). Looking at the behavioral advantages first, it is clear that the amount of flexibility is greater in startups. This is one of the biggest advantages small firms have over big ones because flexibility is a viable source of competitive advantage in volatile industries (Fiegenbaum & Karnani 1991). This flexibility is caused by a lack of bureaucracy which allows entrepreneurs to quickly react to incoming information and enables them to make fast decisions (Verhees & Meulenberg 2004; Berends et al 2014). Another strength is the internal communication system; knowledge and opinions are shared to a higher degree in smaller organizations and have to pass through fewer people (Berends et al 2014), which again allows for faster decision making. These are promising advantages for startups, but there are also several weaknesses.

As mentioned, these are primarily related to resources and skills. Relevant weaknesses arising from the latter can include a lack of the organizational and marketing capabilities found in larger firms (Ibid) and a lack of experience with NPD, which can have a direct impact on user research and, of course, product development. Educating oneself is thus a big part of the life of most entrepreneurs. The other big obstacle for startups is the very common lack of resources (Baker & Nelson 2005; Moultrie et al 2007). Startups simply do not have budgets to match those of larger companies. This means that startups often develop their products on a small budget and with limited personnel. This

lack of resources has been shown to be a key constraint for the often quite expensive innovation process (Berends et al 2014). The issue here is that developing a new product can quickly become expensive, especially if the product developed does not fill a market need and will thus require the NPD team to start over. That is, costs soar when a new product does not offer sufficient value to the users. Naturally, this is negative for any kind of company, but since startups are not financially geared to handle many of these failures, they have more to lose than their larger counterparts. Thus the risk associated with product development is higher for startups because they are likely to run out of money faster (Berends et al 2014). For this reason it might be better for them to prioritize and adopt a different approach to product development than the traditional, formalized ones that are useful for established companies (Huang et al 2002; Berends et al 2014). Such an approach will be described in the remainder of this chapter and will also be the topic of chapter 5. From the analysis so far, it seems clear that such an approach should prioritize fast and cost-effective learning about user needs in order to create real user value and to avoid spending a lot of money on developing failures. At the same time, the approach should benefit from the simple communication infrastructure and general maneuverability in startups to make organization-wide decisions based on the collected information.

The differences presented so far are quite tangible. They exist on a very visible level that can be demonstrated in written documents. However, startups are also distinct from established companies on a deeper and more fundamental level.

3.2 Causation and effectuation

A good way of understanding this is through effectuation theory, which provide a perspective on how entrepreneurs make decisions under uncertainty and create new markets and opportunities (Berends et al 2014). The theory was first formulated by Saras Sarasvathy in 2001 as an alternative to the theory of causation, which is descriptive of the development processes of established organizations, which is typically assumed in existing literature, as described above. Sarasvathy's theory of effectuation is concerned with entrepreneurship in general but it can also be applied to NPD in startup environments (Berends et al 2014). The following will be a brief presentation of both causation and effectuation theory that serves to discuss how they affect the NPD processes available to entrepreneurs.

In short, the difference between the two theories can be explained in Sarasvathy's words: "*Causation rests on the logic of prediction. Effectuation rests on the logic of control*" (2001, p. 243). This means that entrepreneurs who follow a causation logic choose between means to achieve a desired effect. On the other hand, effectuation practitioners chose between many possible outcomes based on a specific set of means (Sarasvathy 2001). That is, causation is a goal-directed managerial process that is concerned with efficiency. Effectuation, on the other hand, is driven by the means available to entrepreneurs (Berends et al 2014). This might be best explained by an example most people probably know from their own life: The planning of a vacation (Ibid). One way of arranging a vacation is to start out by deciding where to go and then analyze and predict the most efficient way of getting there, by researching various transport options and similar. This is the logic of causation. A vacation planner following the effectuation theory, on the other hand, will not start with a destination in mind. Rather, he will consider what resources are available (time, budget, transport options et cetera) and based on these reach a conclusion about where he can go. This metaphor translates directly to entrepreneurship. The effectual entrepreneur will decide what product to develop based on the resources available to him, including his own skills, personal network, resources, and interorganizational relations (Berends et al 2014; Sarasvathy 2001). Effectuation theory thus supports that the differences discussed above enables, and often causes, entrepreneurs to act differently than large corporation in development processes. Sarasvathy embody the theory of effectuation in four principles (2001), which will be presented here:

1. Affordable loss, rather than expected returns. Entrepreneurs will start by determining how much they can afford to lose and then experiment with the maximum possible amount of strategies within their means. This criterion also involves the avoidance of risks that cannot be handled (Berends et al 2014).

2. Strategic alliances, rather than competitive analysis: Entrepreneurs will encourage precommitment from various stakeholders in order to reduce uncertainty as well as to create entry barriers to new competitors. The strategic alliances will also codetermine which course of action to take (Berends et al 2014) and which market will be created (O'Connor & Rice 2012).

3. Exploitation of contingencies, rather than exploitation of preexisting knowledge: The entrepreneur learns along the way and is open to listen and react to the things that actually happen because his

creative process allows him to utilize these (Berends et al 2014).

4. Controlling an unpredictable future, rather than predicting an uncertain one: The entrepreneur deals with uncertainty by focusing on the future aspects that are under short-term control (Berends et al 2013) and believes that "*to the extent we can control the future, we do not need to predict it*" (Sarasvathy 2001, p. 251).

It should be noted that effectuation as a theory is still a relatively new concept, which needs further support (Perry et al 2012), especially since Sarasvathy does not provide any empirical evidence for her conjectures. However, such support is beginning to form. For instance Chandler et al's study support the general conceptualization of effectuation by finding strong indication that experimentation, affordable loss, and flexibility are not a part of causation, whereas effectuation mitigates uncertainty (2009). Furthermore, a large study of almost 10.000 new ventures found that the effectuation principles are positively related to the performance of new ventures, except affordable loss which was merely insignificant (Read et al 2009). However, other literature has found a connection between the behaviors associated with affordable loss and success in startups (Fisher 2012). So in conclusion, the theory of effectuation is useful for describing how entrepreneurs can behave in development processes and gives some insight into how to maneuver during NPD.

3.3 What this means for entrepreneurs' NPD process

From the above it seems clear that startups will be best off taking an effectual approach to their product development. Effectuation theory simply fits the product development situation in startups that works with limited resources (Baker & Nelson 2005) and have to make major decisions under uncertainty (MacCormack & Verganti 2003). Thus "*the logic of effectuation suits the characteristics of product innovation in small firms*" (Berends et al 2014, p. 619). This section will combine the above findings on startups' organizational characteristics and effectuation principles to arrive at some recommendations for how entrepreneurs can behave during early-stage NPD efforts. At this point in the paper, some of these behavioral recommendations might seem unspecific to user value learning, however, chapter 5 will describe in detail how they are all directly connected.

First of all, entrepreneurs should prioritize learning over planning in order to control an unpredictable future and discover contingencies. McGrath and MacMillan argue that it is counterproductive for

startups to focus on meeting a plan because it prevents learning and makes it harder for them to change direction (2005). Rather, entrepreneurs should use milestone events to test assumptions cheaply, thus postponing a major use of resources (Ibid). Not spending time and money on planning also saves valuable resources (Fisher 2012) and thus also decreases the cost of failing. In extension, as Sarasvathy argues, prioritizing to reduce uncertainties rather than predict them, will automatically lower the risk of failure (2001). However, this does not mean that entrepreneurs should abandon planning altogether. In a meta-study Brinckmann, Grichnik, and Kapsa conclude that business planning does increase performance of new firms, but not as much as it does to established firms, due to the higher levels of uncertainty, and lower amount of information and structures (2008). They suggest that startups engage in a dynamic approach to planning, learning, and doing, in which planning and doing are carried out in parallel so that learning takes place and planning efforts can be increased over time (Ibid). This enables startups to discover and exploit contingencies. This was supported by Berends et al who found that the reason startups involves users early is to learn about product features, not to attempt to predict demand (2014).

A closely connected recommendation concerns uncertainty and failure. Effectuation theory implies that entrepreneurs should not be afraid of making mistakes, rather they should strive to make potential mistakes as soon and as cheaply as possible, before the product development costs increase (Harper 1999). That is, entrepreneurs should manage uncertainty. This is in line with Sarasvathy who suggests that effectuators will fail more often, but can manage those failures effectively which is a benefit in the long run (2001). Product development is not solely about failing though: Failure needs to serve a purpose. Sull suggests taking a disciplined approach to failure in the management of uncertainty, in which it has been made explicit which uncertainties are being tested and how long and expensive an experiment can be (2004). This should improve the process of experimentation as well as its results, which will be easier to learn from when the experiment has a clear purpose. Sull also talks about the dangers of the testers becoming too vested in success, so she suggests having outside persons participate in both the design, execution, and review of the experiments (2004).

The third recommendation for entrepreneurs is to use whatever resources they have available (Baker & Nelson 2005) in order to avoid taking too large risks, and thus experiencing only affordable loss. Apart from meaning that startups should combine their organizational and personal skills creatively it also means that entrepreneurs should engage in the types of market research that they can afford and which will provide the kind of information that is most needed. Therefore traditional market

research methods, such as surveys, might be used less than intuitive and gut-based activities, such as actually attempting to sell the product (Sarasvathy 2001). This was also found by Berends et al who identified a flexible, step-wise approach in startups to develop and improve prototypes and products (2014). Each step contained little risk of financial loss, and were followed by a reconsideration of how to proceed based on the emergent findings. This made it possible for the startups to develop their products with little risk and always based on accurate, up-to-date knowledge (Berends et al 2014).

In order to give a better overview of the recommendations, they are presented as bullet points here:

- Prioritize learning over planning
- Plan and do in parallel
- Test assumptions in a structured and cheap manner
- Make mistakes before development costs increase
- Use any resources available
- Collect user research to learn about features, not to predict demand
- Be prepared to act on collected user data
- Communicate results throughout the organization

While these recommendations are to some extent practical, they mainly describe a general approach startups can take in early-stage product development. This approach is important because it provides the frame for how entrepreneurs can collect information about user needs to create user value, the main question of this thesis. That is, these recommendations are supporting pillars of the user value learning methods that will be discussed in chapter 6. However, they are not the only pillars needed. Before user learning methods can be recommended, the importance of a user value-focus should be explained, as should the strategies that can be applied to foster this focus. This is the topic of the following chapters.

Chapter 4: User value

As stated in the introduction, this thesis is concerned with how entrepreneurs can collect usable data on user needs. The purpose of gathering this data is to develop good products. But what is meant by 'good products'? Put simply, this paper perceives 'a good product' to be an offering that delivers user value. This chapter will define user value and justify its relevance for NPD. This definition also functions as an analytical background of the thesis, as it provides detailed insights into how an entrepreneur's understanding of user value affects the user research methods available to him.

Since the following definition is quite complex, it may be helpful to note already that user value, on an overall level, is derived from the benefits a user get from a product, no matter if these are tangible or intangible (Wong 2012). This chapter will be separated into two parts:

1) Justification of user value
2) Definitions of user value

4.1 Justification of user value

While it is true that the purpose of good data collection is to create products of user value it is important to notice that good products are in themselves not the end goal for most entrepreneurs. Most often the purpose of creating good products is to enable the company to achieve its own goals, typically increased profits, more customers, or a bigger market share. And according to academic literature, delivering superior user value is a good way to achieve these goals. Wong found user value to have a strong influence on new product success (2012) and several academics encourage organizations to focus their strategy on delivering superior user value (Woodruff 1997). This is partly because the failure to understand the customer is widely believed to be one of the main reasons new products fail (van der Hoven et al 2013) but it goes beyond this: In fact, some authors on the topic consider user value to be the next source of a company's entire competitive advantage (Woodruff 1997) and Slater goes as far as describing the commitment to customer value-focused innovation as essential for sustaining competitive advantage in todays hypercompetitive environment (1997). It is also argued that profits follow - and even requires - the offering of superior customer value to the

target market (Day 1990 cited in Rosenø 2005). That is, academics state that providing superior user value will not only generate profits but will also help secure the firm's future. This belief that user value is a means to an end for a company is also present in the practical world, and can be exemplified by Google's mantra: "*focus on the user and all else will follow*" (Google n.d). With all this support for focusing on user value it is time to look closer at the term itself.

4.2 Definitions of user value

The first step in defining 'user value' is to define the term 'user'. For the purpose of this paper, a user is defined as someone who uses a product without necessarily paying for it. It is thus not exactly the same as a customer, who is a person or organization that use the product but who also generates income to the company. Users and customers are often the same people, but not always. There are two reasons for mentioning this: First of all, this thesis includes case material from startups that makes a distinction between users and customers, and it needs to be clear that this thesis is concerned with the value offered to those that *use* the product, regardless of who pays for it. The other reason for mentioning it is that most literature does not make a distinction between users and customers because it is implicitly understood that the customer is also the user. For this reason, this paper will cite theory on 'customer value' when actually referring to user value. Now that this is clear, it is possible to elaborate on the entire concept of interest: user value.

The first thing to understand it that no single accepted definition of 'user value' seems to exist (Rosenø 2005). However, all theorists seem to agree on one aspect: value is determined by the user (Witell et al 2010). Apart from this, various definitions have different focus points. The following will present and elaborate on three different definitions of user value, inspired by the work of Rosenø (2005):

- User value based on product attributes
- User value based on desired outcomes
- User value based on latent needs

The reason for not presenting merely one definition is that entrepreneurs and academics alike make use of diverse definitions, as will be evident throughout this paper. This is interesting because the specific definition sets the stage for how entrepreneurs can learn about user value and is likely to affect the type of innovation that can be achieved. One purpose of this thesis is thus to uncover how an entrepreneur's understanding of user value is likely to affect the user learning methods available to him.

4.2.1 User value based on product attributes

The first definition is presented by Ulaga and Chacour, who base it on the definitions used in five other academic papers (2001). These authors define user value as the customer's perceived trade-offs between benefits and sacrifices in a specific situation of use in a product (Ibid). That is, the amount of value in a product is based on the user's evaluation of the benefits he gets from the product compared to the sacrifices connected to using and acquiring it. Benefits can be anything from product quality, service, social benefits, and technology and the most typical sacrifice is the price to acquire and use the product (Anderson et al 1992).

Inherent in this definition is the notion that the user is aware of and can express his needs. That is, the user is able to write a list of pros and cons of a certain product to evaluate whether it offers enough value for him to use. And he can, of course, do the same with competitor offerings, which will provide him with quite a clear answer about which product he will prefer to use (Ibid). The trade-off premise of this definition is accepted by most theorists, however, the reliance on the user's ability to be aware of his needs and able to express them is problematic. This is because user research done within this definition will only reveal expressible information concerning specific attributes (Rosenø 2005). This is a limitation for how entrepreneurs can learn about user value, and is not ideal for achieving radical innovation. Taking these limitations into account, other definitions have been formulated.

4.2.2 User value based on desired outcomes

The second definition was phrased by Woodruff and Gardial in their book "Know your customer":

> *"Customer value is the customers' perception of what they want to have happen in a specific use situation, with the help of a product or service offering, in order to*

accomplish a desired purpose or goal" (1996, p. 54).

This means that - like in the first definition - value is the result of a trade-off. However, not the trade-off between specific attributes, but rather between the outcomes of using a product. In this way, this definition highlights something that is not understood in the first definition: Products are tools for users to accomplish certain purposes, and create value by making this possible (Ibid). For instance, a meal's value is not evaluated based on its attributes - the ingredients - but on the outcomes of eating it, for instance its taste and nutritional level. According to this definition, entrepreneurs should focus on identifying users' desired outcomes, because this can lead to more radical innovation. For instance, someone realized that a desired outcome of drinking coffee is to stay awake, and evaluated that this could be better achieved in different ways, and thus invented energy drinks. This example is admittedly thought-up, but it demonstrates how a focus on users' desired outcomes can lead to radical innovation that could not have been achieved by focusing on the specific product attributes (Ibid).

In this definition it is thus not assumed that users are knowledgeable about which specific attributes will be valuable to them. Entrepreneurs will therefore have to approach user research differently than those adhering to the attribute-based definition. Research emphasis should be placed on the actual use situations, which will provide more true and useful insights which can lead to radical innovation (Rosenø 2005). Real radical innovation, however, is most likely to happen when yet another layer is added to the definition of user value.

4.2.3 User value based on latent needs

The final definition of user value also acknowledges the trade-off between benefits and sacrifices and it accepts the importance of the user's desired outcomes. In this way it builds on the previous two definitions but it also moves beyond them by focusing on users' latent needs (Rosenø 2005). These are also referred to as 'hidden needs' and are those needs that users have without having realized it (Goffin et al 2010). Uncovering latent needs typically paves the way for very radical innovations but they are difficult to uncover for two reasons in particular. First of all, since these needs are hidden to people, they cannot easily be articulated. These needs are what Nonaka et al calls 'tacit knowledge'

(2000) and are thus only known on some subconscious level. It is something that people know but have not attempted to put into words, such as how to whistle or kick a football, or why the taste of vanilla flavored ice cream is preferred over that of chocolate (Nonaka et al 2000). It is difficult for a researcher to make this tacit knowledge explicit because it is so ingrained in users that it does not occur to them to express it, or they do not know how to express it, or they have simply not thought of it as a need. And even if a few potential users should know how to express these hidden needs, they could be unlikely to do so, because they consider the possible solutions to be unrealistic. This is the second difficulty in uncovering latent needs: Users are simply not aware of neither the technological possibilities (and are thus unlikely to suggest extreme solutions) or the skills of the entrepreneur, which makes it unlikely that propositions from users will be realistic (Leonard & Rayport 1997; Frishammar & Hörte 2007; Vega-Vazquez et al 2012). Due to the inability of users to express their hidden needs, entrepreneurs aiming to identify these make use of different research methods than entrepreneurs adhering to the attribute- and outcome based value definitions.

4.2.4 Importance of definitions

As mentioned, the reason for this rather extensive section is that entrepreneurs' definition of user value sets the stage for how information about it can be found. Entrepreneurs following the first definition will use different tools and methods for learning what constitutes user value than someone adhering to the last definition. Therefore these definitions are helpful for two things:

1) Describing how entrepreneurs think about user value, which can lead to
2) Recommendations on how to do user research in specific situations

Even though the definitions have been presented here as three separate understandings of user value, it cannot be expected that entrepreneurs adhere perfectly to one of them, and placing entrepreneurs in a theoretical box is not in the interest of this paper. Rather, the distinctions were made in order to provide an easily understandable analytical foundation that can guide the analysis in the remainder of the paper. To this end, a slightly simplified overview of the definitions of user value is found in Table 3.

Table 3: Definitions of user value		
User value based on	**Expressibility**	**Type of innovation**
Product attributes	Can be expressed	Incremental
Desired outcomes	Can be expressed to some extent	Incremental and radical
Latent needs	Can not be expressed	Radical

Since this thesis focus on NPD in startups it will include both radical and more incremental innovation projects. For this reason, none of the above definitions are preferred above the others: They all have their place and value in specific kinds of user research. This being said, chapter 3 made a strong argument that the flexibility of startups enables them to react to novel and unexpected information, which means they are in a position to benefit from radical innovation efforts.

It might seem straightforward to add a fourth row to Table 3, that would list the user research techniques that are available within each definition. Something similar has been done by other researchers. For instance Goffin et al separates research methods into traditional and modern tools, where the traditional tools are product-attribute based and focus on making solutions from the exact research findings. The modern tools, on the other hand, takes the *problem* as the starting point for product development, which corresponds to the desired outcomes- and latent needs definitions of user value (Goffin et al 2010). Slater and Narver makes a similar distinction, which they call being either customer-led or market-oriented (1998). The first group listens to customers and do what they say, by using methods such as focus groups, surveys, in-depth interviews, and conjoint analysis (Leonard & Rayport 1997), whereas an entire strategic orientation has evolved around the latter definition: Market orientation. This is described by Slater and Narver as involving a commitment to understanding both expressed and latent needs of users as opposed to the customer-led business which only focus on the expressed desires (1998). This philosophy includes tools such as applied ethnography, observation, market experimentation through prototyping, and lead user techniques (Rosenø 2005).

The conviction of this thesis is that separating research methods into these kinds of groups is too simplistic to be useful in practice, since all methods can be executed in diverse ways with various outcomes. Due to this thesis' focus on applicability in the real world, the research techniques will

instead be separated based on the type of product development questions they are useful for answering. This will be evident in chapter 6 which will present various user research techniques and discuss what type of innovation they are likely to result in.
It should be noticed, however, that even though this thesis separates research method differently than Slater and Narver, these authors' insights into the value of being market-oriented are highly useful for understanding the general approach entrepreneurs might take to NPD. This will be explained in much more detail in the following chapter. Before getting to that, however, there is one more important point to be made about user value: It is two-sided.

4.2.5 Value from users

One thing all three above definitions have in common is that they focus on value *for* the user. However, there is another side of the concept: Value *from* the user, which can be understood as the value the product creates for the company, typically in the form of potential profitability. This is a relevant aspect for entrepreneurs to consider, because the profitability of the product is what allows the entrepreneur to continuously deliver superior value to users (Rosenø 2005). That is, when making decisions in product development, entrepreneurs should not *only* consider how to bring the most value to users (Baker & Sinkula 2005). For instance, users may demand features that would not be economically viable to provide. A different example of a value *from* user-decision is a scenario where it is unclear which target market to serve. It two diverse segments both appreciate the product, but one has a higher expected lifetime value and thus profitability than the other, the entrepreneur should consider listening more to the members of that particular segment (Rosenø 2005). This reason for including this perspective, is that it may be useful for understanding why entrepreneurs act the way they do when it comes to user research and decision making and may thus be more applicable in practice. This thesis, however, will focus primarily on value *for* users.

From the paper so far, it is clear that startups should focus on creating superior user value and they should do so in different ways than established organizations. That is; they should not adhere to the NPD process models commonly applied. What is still unclear is what entrepreneurs should do instead? The next chapters attempts to explain this by discussing how an entrepreneur can strategically (chapter 5) and practically (chapter 6) prioritize and learn about user value for NPD.

Chapter 5: Strategic approach

The goal of this chapter is to describe a strategic approach that will enable entrepreneurs to focus on user value and integrate it into their product development. In order to do this a closer look will be taken at the two strategic orientations that seem to be the most relevant for NPD and user value in startups: Market orientation and entrepreneurial orientation. This chapter will accommodate the findings of the two previous chapters and integrate them into a general strategic approach that will be useful for making practical user learning decisions. This chapter is separated into four sections:

1) Definition of strategic orientations
2) Market orientation
3) Entrepreneurial orientation
4) Application

Throughout this chapter the definitions and analyses will manly concern those aspects that are relevant to answer the research question and omits the rest. The final section of this chapter will combine the findings from the rest of the thesis until this point and the resulting recommendations will provide the foundation for the following analytical chapter. It will be a strong basis on which to evaluate strong and weak sides of various practical data collection methods and thus increase the understanding of which specific methods might be useful for gathering user input in specific situations.

5.1 Definition of 'strategic orientations'

Before going into detail with the specific orientations, it should be understood what a strategic orientation is and what influence it has on a company. This short section will define and elaborate what the term covers in order to explain how strategic orientations can be useful for answering the research question.

This section is to a large extend based on the meta-study on strategic orientations carried out by Henri Hakala (2010) and it seems appropriate to initiate the definition of 'strategic orientation' in his words: "there is no universally accepted definition of strategic orientation of a firm" (Hakala 2010, p.

199). However, in short, strategic orientations are the foundation for how a company behaves (Hakala 2010). They can be considered - and are by many experts - to be the steering mechanism of an organization (Grinstein 2008). They consist of principles that influence and direct a company's activities by generating the behaviors that can ensure the wanted performance (Hakala 2010). In this way, strategic orientations are adaptive mechanisms that can be exploited by an entrepreneur. Thus, they can strongly affect how organizations handle product development and user research and, as argued above, also influence new product success. It should also be noted that, on a general level, the relationship between strategic orientations and firm performance is found to be increasing (Jalali et al 2014).

The concept of strategic orientations is closely related to the concept of organizational culture (Hakala 2010) but the latter is actually considered to be a manifestation of the firm's strategic orientation (Braunscheidel & Suresh 2009) and both are driven by the overall vision of the company. The reason for mentioning this is to stress that startups that are typically driven by a small team with shared passions and values will often have a quite internally well-known and clear strategic orientation, even though it might not have been put into words. If this is not the case, then they could probably benefit from having one, since they have the ability to use it efficiently, as described in chapter 3. Many different strategic orientations exists and they can all be defined in various ways. Actually, trying to define them all in a clear and accepted way is quite difficult, academically speaking. This paper will not attempt to do so, rather, it will focus on two orientations that seem to be relevant and describe the usefulness of these and how they relate to each other. This is all that is required for the purposes of this thesis.

In order to conclude anything about the relationships between specific orientations it is prudent to first discuss the ability for companies to have more than one strategic orientation. This is a topic that has been discussed a lot in research without a clear result, maybe because of the mentioned lack of a clear definition of strategic orientations. However, judging from the largest meta-study on the topic it is indeed possible for an organization to have more than one strategic orientation at a time because these orientations can be complementary (Hakala 2010). That is, the orientations can "co-operate in creating a pattern of orientations that permits more complex explanations" (Hakala 2010, p. 212). While this is not the opinion of all theorists, Hakala's meta-study recommends this view as being the most productive way to understand strategic orientations as being activities and principles of

adaption that support an organization's performance (2010). Indeed, several studies suggest that having only one strategic orientation is not adequate (Atuahene-Gima & Ko 2001) and that organizations might perform better when balancing more than one orientation (Grinstein 2008) because certain combinations of strategic orientations can result in sustained competitive advantage (Hult et al 2004).

This paper has already established the importance of creating user value and one strategic orientation in particular is relevant for discovering user needs for product development: Market orientation. Few researcher, if any, argues against this orientation's relevance, which is why it will be the main orientation considered in this chapter. Once its usefulness has been established, it will be discussed how it can be supplemented by certain dimensions of entrepreneurial orientation, which will be used to suggested an overall approach.

5.2 Market orientation

The following is a presentation of market orientation and an analysis of its effect on new product development and success. Critiques against market orientation will be presented and responses will be given to these. This will provide a better understanding of how innovation can be achieved through listening to the market in the right way.

To start from the top: Market orientation is an implementation of the business philosophy known as the marketing concept. The main focus of this philosophy is to satisfy needs and wants of customers more efficiently and effectively than competitors (Kohli & Jaworski 1990; Frishammar & Hörte 2007) in order to keep them close to the company (Moorman & Rust 1999). Thus, the purpose of market orientation is to deliver superior customer value (Narver & Slater 1990), which chapter 4 found is exactly what entrepreneurs should strive to do. Entrepreneurs adhering to a market orientation thus use customer-focused, market-oriented learning (Baker & Sinkula 2005; Kohli & Jaworski 1990) to improve "the extent to which customer needs are satisfied through continuous needs assessment" (Frishammar & Hörte 2007, p. 765). With this purpose there can be little doubt that market orientation is relevant for answering the research question. So what does it entail?

Put simply, market orientation involves collecting information about users, converting this information into knowledge, and utilizing this knowledge in product design decisions (Matthing et al 2004). So the starting point of market orientation is to learn about the market (Kohli & Jaworski 1990). It is important to understand that this involves more than merely listening to the verbalized needs of users. According to the pioneering study by Kohli and Jaworski, market orientation also includes those exogenous market factors that affect user preferences and needs, such as regulations and competition (1990). This study is acknowledged as one of two founding studies on market orientation. The other was done by Narver and Slater in the same year. In combination, these two studies form the conceptual framework for market orientation and most newer research on the topic is based on these (Grinstein 2008). This thesis therefore makes use of their definition, which consists of three behavioral components: customer orientation, competitor orientation, and interfunctional coordination, as well as two decisions criteria: long-term focus and profitability (Narver & Slater 1990):

1. Customer orientation: It is the understanding of target users that allows entrepreneurs to continuously create superior user value. It involves an understanding of not only the user's current needs, but also their future needs (Kohli & Jaworski 1990) as well as their entire value chain (Narver 1990). This includes their likes, dislikes, and perceptions (Baker & Sinkula 2005) as well as the economic, social, and political constraints surrounding them (Narver & Slater 1990; Baker & Sinkula 2005).

2. Competitor orientation: is the understanding of competitors both short- and long-term. It includes their current and potential strengths, weaknesses, capabilities, and strategies. Such an analysis should also include the technologies capable of satisfying current and expected needs (Narver & Slater 1990).

3. Interfunctional coordination: While the first two points concern the collection of market intelligence, interfunctional coordination is the actual utilization of the collected market intelligence. It can be easy to think that market orientation is the responsibility of the marketing department, however this is not the case: marketing is a function of the business and market orientation requires the entire company to embrace its values (Slater & Narver 1998). Since value can be created in any part of the user's value chain this response to collected data should be an organization-wide effort (Kohli & Jaworski 1990; Narver & Slater 1990). The main point here is that companies should *act* on the information, it is not enough to collect it. This is true whether the information is about product

design, target markets, distribution or something else (Kohli & Jaworski 1990). It can be speculated, that this organization-wide response will come more natural to startups, since they are rarely separated into distinct departments.

As mentioned, Narver & Slater also includes two decision-making criteria in their conceptualization: Long-term focus and profitability. These are less relevant to the research question, but it is important to mention that market orientation is concerned with *continuously* creating superior user value. In this way, market orientation comprises a continuum, rather than a one-time effort (Narver & Slater 1990; Kohli & Jaworski 1990). Furthermore, profit is the objective - and often a consequence - of market orientation (Ibid). This relevance of profit was explained in the section on value from the user, so if market orientation indeed results in increased profits, this is a good reason to consider applying it.The following will be a discussion of the effects of market orientation, which will also describe its potential effect on product profitability.

5.2.1 The effect of market orientation

Market orientation has been studied to a great extent and is "almost universally recognized as one of the main contributors to the success and performance of a firm" (Hakala 2011, p. 200). A strong relationship between market orientation and business performance has been demonstrated in literature. This includes positive effects on profitability, sales growth, customer retention, and new product success (Slater & Narver 1998; Frishammar & Hörte 2007; Vega-Vazquez et al 2012; Narver & Slater 1990). The latter of these is the most relevant factor to this paper, which is why it is relevant to mention that a meta-study of market orientation noted that 16 out of 17 articles regarding the relationship between market orientation and new product success found a significant positive relationship between the two (Baker & Sinkula 2005). Two thirds of these articles also found a positive relationship between market orientation and market share and one third reported a positive effect on profitability (Ibid). This is interesting because it adds a new layer: Indirect relationships. That is, the authors conclude that market orientation will lead to increased market share *if* it results in successful new products, and that this increased market share is what leads to increased profitability (Ibid). From this it can be concluded, that market orientation is likely to lead to products of superior user value, but that there are also other factors that influence the final result on a company's bottom-line. In this way, market orientation is a resource that needs to be supported by other capabilities, such as

prediction of sales, control of costs, and responsible distribution, pricing, and promotion decisions (Ibid). This paper is not concerned with how to improve profitability but with how to improve *one* of the parameters that can lead to profitability, by creating products that people will want to use. Even with this goal in mind, it should not be ignored that the success of a new product depends not only on the effectiveness in conceptualizing user value but also on the entrepreneur's ability to do so cost-effectively (Ibid). This is relevant for this paper because entrepreneurs will have to make some decisions in product development, and costs are likely to be a strong factor in product design decisions, confer startups' limited resources mentioned in chapter 3. The interviews with entrepreneurs will provide more insight on this. The costs associated with market orientation is one critique of the approach but there also exist others that relate to the ability of the orientation to result in radical innovation. These will be described in the following, and they are interesting to consider, because it seems likely that these critiques will be echoed in the opinions of the entrepreneurs interviewed.

5.2.2 Critique of market orientation

It is not uncommon to hear entrepreneurs object to market orientation and market research. Generally the objections seem to be based on users' ability to provide useful insights for product development. One critique is based on the understanding that market orientation involves talking directly to users and highlights the problems associated with this. Examples of these are that respondents have a tendency to attempt to please the inquirer by giving the expected answers and that they are inclined to not reveal their practices if these can be considered inappropriate (Leonard & Rayport 1997). Some also consider user insights limited because users are not aware of the technological possibilities that exist (Frishammar & Hörte 2007; Vega-Vazquez et al 2012). Another common critique is that customers do not know what they want. This argument is heard both among entrepreneurs and in academia.

This clearly demonstrates that there exists two very different views on how market orientation impacts new product performance. The advocate perspective was presented in a minute ago, and the opposition was described just now and can be boiled down to that conviction that market orientation will lead to monotonous products (Deszca et al, 2010 cited in van der Hoven et al 2013). This is believed because the input from users are considered to constrain innovative thinking because user opinions are limited to the familiar and will thus result in 'me-too' products (Frishammar & Hörte

2007). There is some empirical support for this, for instance Atuahene-Gima and Gatignon and Xuereb found market orientation to have a negative impact on product newness to customer (Atuahene-Gima 1996 cited in Frishammar & Hörte 2007; Gatignon & Xuereb 1996 cited in Vega-Vázquez 2012). These critiques should be taken seriously, since they provide reason for concern about market orientation's usefulness among entrepreneurs. On the other hand, market focus has also been found to have a positive effect on the degree of product newness (Lukas & Ferrell 2000), which was found to be good for sustainable competitive advantage in chapter 4. These opposing results from studies can make it difficult to know what to believe. However, it seems that there is one clear reason for the opposing results: The studies do not distinguish between responsive and proactive market orientation. These are two very different ways to approach market orientation, and they will be explained in the following, as a response to the above critique.

5.2.3 Responsive and proactive market orientation

Research has recently started differentiating between two types of market orientation: Responsive and proactive (Grinstein 2008). This is done in response to the above critique that market orientation leads to 'me-too' products, and is a way of clarifying market orientation. In order to fully understand the differences between responsive and proactive market orientation it will be useful to recall the definitions of user value from chapter 4. This is because the responsive market orientation is concerned with identifying and satisfying the expressed and current needs of users. The criticism of market orientation is mainly based on this perspective, that is, the definition of user value that is based on product attributes and expected outcomes. However, as was described in chapter 4, there are ways to discover user needs that do not involve the customer's expressed needs and opinions. And these can be found by applying a proactive market orientation, which is aimed at uncovering latent needs (Grinstein 2008; Witell et al 2011) and leads to generative learning (Slater & Narver 1998). In this way, proactive market orientation is based on the latent need definition of user value and is thus more likely to result in radical innovation (Vega-Vázquez 2012). The responsive market orientation, on the other hand, is likely to lead to more incremental innovation. This might be best explained by adding an addition to Table 4, keeping in mind that this is still a simplified representation of the theory:

Table 4: Definitions of user value and market orientation			
User value based on	**Expressibility**	**Type of innovation**	**Market orientation**
Product attributes	Can be expressed	Incremental	Responsive
Desired outcomes	Can be expressed to some extent	Incremental and radical	Responsive and proactive
Latent needs	Can not be expressed	Radical	Proactive

Most research into market orientation's effect on new product success has been based on the responsive orientation (Narver et al 2004) and since this approach only has a moderate association with discontinuous innovation compared to the proactive orientation (Grinstein) this might explain the above critique and the opposing results.

It should be mentioned that the responsive and proactive market orientations are not mutually exclusive (Lamore et al 2013). That is, it is possible for a startup to have high levels of both. What an entrepreneur should be aware of is the benefits of each approach and what effect they are likely to have on new product success. Narver et al (2004) and Lamore et al (2013) found that the proactive approach exhibited a stronger positive relationship with new product success than the responsive, the effect of which was limited. So in this way, the critics of market orientation are not wrong, but it should be noted that their critique is based on an understanding of only half of the market orientation concept. Another take-away from this is the indication that a proactive market orientation might be the most fruitful for startups. This is the case because it is more likely to result in radical innovation, which is useful in the turbulent environment of startups, where being able to anticipate and react to needs as they evolve will give a more enduring advantage than focusing on a market that is already being served (Slater & Narver 1998). This could be different for a company that works under conditions with limited competition in a market with stable preferences, because this would limit the positive effect of a proactive market orientation. In such a scenario cost-benefit analysis of market orientation implementation becomes more relevant (Kohli & Jaworski 1990). This is rarely the case for startups but it does mean that a proactive market orientation does not always need to be the first

priority for a firm. Also, it demonstrates that market orientation is not a 'one size fits all' concept (Baker & Sinkula 2005): It can be applied in different ways and to different extents based on the company's goals but it is relevant to some degree in every market environment (Narver & Slater 1990). The degree of market orientation is also likely to influence the success of certain market research techniques (Witell et al 2011; Narver & Slater 1990), which will be elaborated on in chapter 6 on practical approaches to user research. Before getting to that point, however, it is necessary to also dwell on a different strategic orientation.

5.3 Entrepreneurial orientation

This is relevant because companies that combine market orientation with other orientations perform better than those who use market orientation exclusively (Grinstein 2008; Atuahene-Gima & Ko 2001). This section will attempt to discover whether the entrepreneurial orientation can be successfully combined with market orientation. More specifically, it will focus on the specific dimensions of the orientation, in order to reveal how these might supplement market orientation. Then it will be discussed how these combinations are likely to affect user value research.

The entrepreneurial orientation suggests that successful product development is driven by certain types of behavior (Hakala 2011). The conceptualization of the orientation thus include the three dimensions that academia posits are useful for capitalizing on emerging opportunities: Innovativeness, proactiveness, and risk taking (Wong 2012). These three dimensions enhance the transformation and renewal of a company and can help create new competencies and new businesses and thus enable a startup to develop new products and grow the organization (Grinstein 2008). Entrepreneurial orientation is relevant to this thesis for two reasons: First of all, because it has been suggested that even with a high degree of market orientation, a company cannot be completely certain what will be valuable to their users. Therefore it is necessary to not only be market oriented but also entrepreneurially orientated (Frishammar & Hörte 2007). The other reason is that, for a startup. entrepreneurial orientation is equivalent to management skills and can thus be considered an intangible resource that can lead to competitive advantage (Jalali et al 2014). The orientation is likely to be present in startups and it thus seems relevant to understand how to utilize it the best way

possible. In the following, the three dimensions of entrepreneurial orientation will be presented and their effect on new product success discussed.

Innovativeness

Innovativeness reflects a company's tendency to engage in new ideas, experimentation, and creative processes as well as its willingness to prioritize research and development, new products and new technologies (Jalali et al 2014; Frishammar & Hörte 2007). There exists a strong, positive relationship between this dimension and new product success (Wong 2012), which is actually stronger than the effect market orientation has on new product success (Frishammar & Hörte 2007). This indicates that while it is important to do user research, it is equally important that startups "depart from existing practices, engage in experimentation, support new ideas and facilitates creative processes" (Frishammar & Hörte 2007). Innovativeness was also found to have a strong effect on the amount of user value in a product, which shows that innovativeness contributes most effectively to new product success when it has the purpose of increasing the amount of user value in the product (Wong 2012).

Proactiveness

To display proactiveness involves acting opportunistically to shape the environment. This could for instance be by being the first mover in a market and creating demand (Jalali et al 2014). In this way, proactiveness also implies quick development (Frishammar & Hörte 2007). It is also thought to have a positive impact on new product performance and profits because it removes focus from the already served markets (Ibid). Even though Frishammar & Hörte did not find support for this, Wong found that the influence exerted on new product success by proactiveness almost matched that of innovativeness (2012). The same study also found that proactiveness has a higher influence on user value than innovativeness has, although both were quite significant.

Risk taking

Risk taking reflects an entrepreneur's willingness to commit resources in high-risk projects. This is an aggressive way of pursuing opportunities that can result in high returns (Jalali et al 2014). This can be measured from low to high risk. Startups always operate in environments of high uncertainty and high risk but this does not mean that all their decisions should be of high risk as well. In fact, research indicates that risk-taking has a less intense relationship with company performance than the other

dimensions of entrepreneurial orientation (Raunch et al 2009 cited in Jalali et al 2014). For new product performance specifically, the results are the same: Frishammar and Hörte found no significant relationship (2007) and Wong found only a limited relationship (2012). Risk-taking was also found to be the dimension that contributed the least to user value (Ibid). For this reason, startups should be cautious about committing to risk taking behaviors and strive to only do so when the risk has been calculated and it is found to be affordable, confer chapter 3.

In general, this analysis demonstrates that the entrepreneurial orientation often leads to a higher amount of user value in products, which improves both new product performance and overall firm performance. In this way it is recommendable for entrepreneurs to apply it, at least to a certain extent. Research shows that too high levels of entrepreneurial orientation can have a negative effect on performance. This is the case in technology-driven startups that give lower priority to market intelligence and does not use it constructively (Grinstein 2008). These startups typically also have a lower level of market orientation (Ibid). This indicates that entrepreneurial orientation should be used in combination with market orientation. It is a natural combination due to the many similarities between the two orientations: They both involve being proactive, responsive, and aggressive towards competitors and customers (Ibid) and they have similar effects on new product success (Grinstein 2008; Atuahene-Gima & Ko 2001). Furthermore, they supplement each other well, in that the market intelligence valued in market orientation provides a strong foundation for the actions recommended by entrepreneurial orientation (Atuahene-Gima and Ko, 2001). For instance, market orientation limits the need to take big risks, a dimension of entrepreneurial orientation that was found to have no positive effect on new product success. Therefore, these two orientations should be combined by entrepreneurs to achieve a synergetic effect that will improve product innovation and new product success.

5.4 Applying this to user learning

While strategic orientations have influence on all aspects of an organization, the above has focused on the effect they have on the creation of user value and new product success. This analysis of each of the orientations' dimensions' effects on product advantage makes it possible to be more concrete in formulating recommendations for what approach entrepreneurs should take to user value learning.

Especially when combined with the findings from chapter 3 this should provide insights that are relevant for entrepreneurs. This section will do exactly this: Combine the findings of the thesis so far in order to formulate a general, strategic approach to user research that is suited for the characteristics of startups. This section can be considered a sub-conclusion on the thesis, which will be followed by chapter 6 on how to practically discover user value.

First of all, startups should proactively be seeking exploitable contingencies by learning about user value, both from users directly and from exogenous factors such as competitors. It is important to note that the purpose of such research is to learn about user needs, not to predict potential demand, and the entrepreneur should be prepared to take immediate organization-wide action based on the new knowledge. That is, they should conceptualize the learnings into products of real user value, even though this might entail a significant shift in the overall strategy of the startup. This is possible due to the size and flexibility of startups and this is an advantage over larger companies that should be exploited. Because of the likelihood of sudden change caused by this, entrepreneurs should not spend much time formulating and adhering to long-term plans for their potential products, since the discovery of real user value can cause the startup to change their business plans. For this reason, it is important that the user learning happens as soon as possible, so resources are not wasted on creating a product nobody wants to use: Learning should take place before or parallel with development. This will not only help to create a better product, it will also decrease the time to market, which is important for companies aiming to shape the environment. Furthermore, it will decrease the cost of development and the price of developing the wrong things. This is paramount to startups, as they often have limited resources and will run out of money fast, which can quickly lead to bankruptcy. In this way the parallel approach, and user research in general, is a way of decreasing the risk - and consequences - of failure. This priority to reduce uncertainty instead of predicting it automatically lowers the risk of failure. The key thus seems to be to limit risk by testing assumptions about user needs and product features cheaply and quickly, before committing large amounts of resources. However, learning about user value does require some resources. It is therefore important that startups have a high degree of innovativeness when searching for ways to conduct research. Entrepreneurs will have to be open to new ideas, engage in experimentation, experiment with new technologies, and support creative processes. They have to use any resources available to them in order to find the most effective and efficient ways of collecting valuable knowledge. It is interesting to

notice that this is not only true for user value research. It also applies to other aspects of the business, including some of those that are natural constraints for some startups, such as the ability to make responsible distribution, pricing, target market, and promotion decisions. This can be improved by taking an innovative research approach. This amounts to a lot of learning, probably also more than startups are able and/or willing to do. If it is not possible for an entrepreneur to test all his hypothesis, he needs to engage in only the types of research that he can afford and which will provide the kind of information that is most needed. Thus, a disciplined approach to value learning is required. This should make clear how long and expensive specific knowledge gathering activities can be as well as state exactly what is being tested. Knowing this will make the choice between proactive and responsive measures easier, since these result in different types of knowledge that can be used for different types of product innovation. Finally, it should be understood by entrepreneurs that market orientation is long-term and continuous and that they should therefore continuously learn in order to sustain the competitive advantage over time.

This summarizes the findings of the thesis until this point and should provide an understanding of the strategic approach that entrepreneurs can be taken to learning about user value. However, as should be clear by now, there is no one-size-fits-all method to user research. The next chapter will make it clear how user learning can take place in practice.

Chapter 6: Practical approach

This chapter provides a practical perspective on how entrepreneurs can collect information about user value. It will present and discuss various user research techniques that entrepreneurs can apply to effectively operationalize user value learning. Several sources will contribute to this discussion:

- The theoretical chapters above are useful in their own right but they will also be a foundation for understanding the specific research methods abilities to uncover needs and result in innovation. New theories will also be introduced, in order to give an academic introduction to the techniques.
- Interviews with entrepreneurs will reveal how startups typically engage in user research. This will provide insights on some commonly used techniques as well as entrepreneurs' understanding and evaluation of their usefulness. This will illuminate entrepreneurs' opinion on the relevance of user value research, the obstacles for research, and its estimated importance for successful product development.
- Interviews with experts on user research will be used to bridge the gap between what theory says and how entrepreneurs think and act. Their practical experience and theoretical knowledge will be used to explain the importance of, and possibilities for, conducting useful user value research as a startup.

This chapter will not formulate new and perfect user research techniques. That is not only outside the scope of this paper, it is also unnecessary because useful user research methods already exist. The problem is, as will be demonstrated, that a certain confusion exists about how and for what purpose these should be applied. For this reason, this chapter will focus on those techniques that are commonly known and used by startups. It will be explained how these methods are applied, how they should be applied, and what their function is. This knowledge will be valuable to entrepreneurs, because different methods provide different types of information and it is important that entrepreneurs use the techniques most useful to their specific situation (Appendix 1, X1; X3). The focus on the most common research methods, is thus an attempt to make the findings easily applicable to entrepreneurs. It is for the same reason that the techniques - and thus this chapter - have been separated into three groups, based on the questions they can provide answers to. These are:

1) Do users have unmet needs?
2) How can these needs be satisfied?
3) Does anyone like the solution enough to use it?

It should be mentioned that this categorization of methods is - to the knowledge of the author - unique to this paper. Other ways of separating methods are based on their degree of user involvement (Appendix 1, X1) or the type of innovation they are likely to result in (Rosenø 2005). However, since the purpose of this chapter is to discover how these methods are useful to entrepreneurs, they are presented in an order that makes narrative sense, although it should be noted that the methods should not necessarily be practically applied in the same order.

The final thing to know before the analysis can start is who the informants are and what their relevance for this thesis is. This was explained in section 2.3.2 but for the convenience of the reader Table 2 has been repeated here. As stated, further explanation of each respondent's relevance can be found in Appendix 1 along with summaries of the interviews. In order to make it easy for the reader to keep track of which respondents are entrepreneurs and who are research experts, they will be referred to with either and E or an X followed by a number. 'E' signifies the referenced person's status as an entrepreneur, whereas 'X' signifies that the person is a research expert. This reference format makes it simple to follow the argumentation of this chapter. The number makes it possible to locate each of the sources in this table and in Appendix 1.

Table 2: Overview of informants

#	Name	Position	Relevance for thesis
E1	Alex Dagil	Co-founder: Nabby	Entrepreneur + usability award winner
E2	Louise Ferslev	Founder: MyMonii	Novice entrepreneur
E3	Emil Sørensen	Co-founder: FitDo	Novice entrepreneur
E4	Kenneth Francke	COO: Scan Unic	Serial entrepreneur

E5	Erdem Ovacik	Co-founder: Donkey Republic	Serial entrepreneur
E6	Niklas Stephenson	Co-founder: Firmafon	Serial entrepreneur
E7	Patrik Schär	Co-founder: NAU	Novice entrepreneur
E8	Troels Thorbjørnson	Co-founder: Spant Studio	Novice entrepreneur with design-focus
X1	Nanna Gelineck	Usability specialist: Adapt	Expert on qualitative research methods
X2	Kirsten Grønborg	UX researcher: Unity	User research in established company
X3	Frederik Bundgaard	Founder: UX Mentor	Consultant for companies and startups
X4	Lene Karup	Self-employed UX Consultant	UX expertise and design-focus for SMEs

6.1 Do users have unmet needs?

This is a very fundamental question to ask and the answer is very relevant for the decisions to develop a product. If the planned product does not solve a problem or satisfy a need - expressed or latent - the chance of new product success will be minimal (Leonard and Rayport 1997). Therefore an effort should be made to find a true answer, as stressed by the CEO of UX Mentor (Appendix 1, X3). Regardless of the intuitive truth of this, not all entrepreneurs try to immediately answer this question, possibly because they believe they know the answer already. According to anthropologists, this is a problem for research because the existence of pre-defined problems and solutions makes it likely that only data relating to these will be collected (Li 2005). This section will present and analyze entrepreneurs' perspective on validating needs and, in extension of this, discuss how it can be done.

6.1.1 Talking about an idea and listening to 'people'

Every single entrepreneur interviewed for this thesis said that they generally talk to people about their idea, which makes it likely that conversation is the single most common user research method among entrepreneurs. However, most of the entrepreneurs also expressed that they do not necessarily use the input and suggestions they get from these conversations (e.g Appendix 1, E3; E6;

E8). This section will discuss the usefulness of listening to the opinions and suggestions of external people when attempting to identify elements of user value. Thus, it is more a discussion of the concept of 'listening to people' than it is a presentation of an actual research technique.

The first thing to realize is that not all suggestions can or should be implemented. Not only because the suggestions can be contradictory, but because it would require a lot of work, time, and money and would result in a highly ambiguous product. This tendency to strive to satisfy every whim of users is known as overdesign and it happens for several reasons, one of which is that entrepreneurs do not know which suggested features will provide the most user value (Coman & Ronen 2010). Most expressed opinions of users should be ignored as well, as will be described throughout this chapter. As should be evident by now, the challenge is to listen in the right way.
Some entrepreneurs seem to have to some extent decided to not develop their products based on input from people, and instead develop products that suits their personal needs (Appendix 1, E3; E6; E8). Of the three entrepreneurs who develop products based on their own needs, one of them said that his startup takes a 100% point of departure in the fact that he himself thought the product was needed (Appendix 1, E3). The same tendency is seen in Spant Studio, where products are designed based on the perspectives of the designers (Appendix 1, E8), and the fast-growing company Firmafon is not much different, in that product decisions are often based on the managing team's own opinions and needs, and user needs will not be considered much until after the implementation of the product or feature (Appendix 1, E6). As Stephenson puts it: "we try to solve our own problems and then we hope someone else has similar issues" (Ibid). While designing for one's own needs might not really be considered a user research method it does demonstrates that product development typically happens due to the belief in an unsatisfied need. An interesting question then, is why entrepreneurs do not confirm this belief by listening to the people they talk to.

Entrepreneurs' answer to this question is very often based on quotations of Henry Ford and Steve Jobs. Both of these entrepreneurs are famous for not asking users what they would like, but instead designing products based on a vision. Ford allegedly said: "If I had asked people what they wanted, they would have asked for faster horses" and Steve Jobs is often quoted for saying: "People don't know what they want until you show it to them". In fact, more than half of the respondents referred to one of these quotations (Appendix 1, E1; E3; E4; E5; E6; E8; X1; X3) so they have had an influence

on the startup environment. However, it seems they are slightly misunderstood by some entrepreneurs[2] and used as a reason to not prioritize user research (Appendix 1, E3; E6; E8). Directly asking people what they want is not expected to result in any useful, new ideas (Appendix 1, E6) because users are not considered to be visionaries. Rather they might be useful for choosing between smaller things, such as specific product attributes (Appendix 1, E8). Translated into the academic language of the previous chapters, this means, that entrepreneurs do not expect users expressed opinions to be useful for radical innovations. This echoes the critique of market orientation presented in chapter 5.2 and is completely justified according to the findings of this paper, as explained in Table 4. This is also strongly supported by one of the user research experts (Appendix 1, X1). These statements from entrepreneurs are clearly based on a definition of user value as product attributes. What seems to cause the misunderstanding is the failure of entrepreneurs to distinguish between expressible needs, latent needs, and desired outcomes. It is true that it is not good research to simply ask people what they would like (Appendix 1, X1) and that users cannot be expected to be visionary and suggest useful solutions. However, there *is* great value in involving users if it is done in the right ways (Appendix 1; X3), which is what this entire chapter aims to elaborate on. The above explanation of the difference between reactive and proactive market orientation is useful for understanding this. Directly asking user what they want is a reactive method, likely to result in incremental innovation because it depends on the user's ability to express his needs. However, proactive techniques can be used to discover users' latent needs, which can lead to radical innovations. Or as the entrepreneur Dagil summarizes it by referring to the Ford quotation: "You can't ask users for solutions but you *can* understand that they want to move faster from A to B" (Appendix 1, E1). All of this is to say that entrepreneurs should not ask users directly for solutions, but instead use other methods for collecting the information they need.

This conclusion is also a response to the other concerns entrepreneurs have about listening to people and implementing their suggestions. These concerns include that people will attempt to give you the answer they think you want to hear (Appendix 1, E6), do not want to sound unimaginative and therefore give you too much information that might not be very good (Appendix 1, E7), can be opposed to products before they experience them in their full form (Appendix 1, E4), and have a lack

[2] Interestingly, it is not known whether Ford ever uttered the famous words and the Jobs quotation is distorted, because of its missing context. He originally said: http://www.businessweek.com/1998/21/b3579165.htm.

of insight into personal future actions, which creates a difference between what they say and how they actually act (Appendix 1, E2; E5). According to the research experts, these are relevant limitations that can be avoided by using the right research methods, typically some form of behavior observation (Appendix 1, X1). Thus, *how* entrepreneurs listen is important, but it is equally important *who* they listen to.

Who to listen to

All the interviewed experts on user research stressed the importance of not only learning from people, but learning from the *right* people. And they all agree that the right people are the potential or current users and customers (Appendix 1, X1; X2; X3; X4). Thus, talking to friends and family might not be very useful for validation, which was also expressed by the entrepreneurs (Appendix 1, E2; E7). This can be another reason for entrepreneurs' belief that people should sometimes be ignored. The reason for talking to them regardless, could be that entrepreneurs use their personal networks more for inspiration than for validation. It is a way of getting different perspectives and discovering ideas and elements that you had not thought of yourself (Appendix 1, E1) and this is probably important for an entrepreneur (Appendix 1, X1). However, it is not likely to be useful for discovering user needs, unless the friends and family are part of the target audience and are asked in a way that will give true insights. And asking in such a way is difficult: Both entrepreneurs and experts are aware of the back-padding behavior typical of people close to entrepreneurs (Appendix 1, E2, E7, X1). As one entrepreneur said: "The real learning came when we tried to sell it to people we didn't know, because they are more honest than your friends" (Appendix 1, E7) - this is an argument also found in academia (Kelley 2002 cited in Rosenø 2005). Thus, entrepreneurs should listen to the users, not their friends and family. This is widely supported by the interviewed experts who involves actual users or target audience members in all their research (Appendix 1, X1; X2). Bundgaard sums it up by saying that: "The better you are at identifying these customers and finding out who they are the more valid information you will get. (...) It is super important that this is done otherwise you risk developing along a path that doesn't make sense" (Appendix 1, X3). This being said, the average user is not always the perfect informant. Sometimes it is more relevant to learn from customers or expert users with complex needs, and sometimes the users with the least amount of knowledge and expertise will be the most useful (Appendix 1, X1; X3). It depends on the purpose of talking to them. This will be elaborated more throughout the chapter as various user research methods are presented.

6.1.2 Learning from competitors

It might seem strange to search for needs by learning from competitors. However, market orientation involves not only a customer orientation but also a competitor orientation (Narver & Slater 1990). Researching the products currently in use to understand their strengths and weaknesses is thus a useful way to validate user needs and confirm potential holes in the market.

Several of the interviewed entrepreneurs do this, although to very different extents. Some ask potential users about their current solutions (Appendix 1, E5), some do online research and take the successful components of other products and combine them into new products (Appendix 1, E1; E3), and some go as far as visiting stores to learn which products are popular and why, purchasing competitor products, and testing these (Appendix 1, E1; E5). Interestingly, none of the research experts mentioned this as a user research method, but this can probably be explained by their typical role as consultants: Most of the time they enter projects at a later development stage, where the product has already started taking form and they thus need to work within a pre-set scope, even though they do not consider this to be optimal for product development (Appendix 1, X2; X3). Regardless of the lack of mentioning, this research method corresponds with the theory on market orientation and can reveal existing and expressible needs as well as desired outcomes of users, by identifying demand, satisfaction, and complaint regarding existing products. Since the technique is also found to be useful by the entrepreneurs using it (Appendix 1, E1; E3; E5), it can be said to be a useful first step in validating user needs and identify user value.

6.1.3 Exploratory observation: The current actions of users

Observation is a classical ethnographic research technique which can be very useful for new product development. Many forms of observation exist and they range from the traditional ethnographic method of pure observation, in which the subjects are observed in their own context with no interruptions, to overseen lab tests where the subjects are asked questions while trying to complete predefined tasks. Naturally, the type of observation has an influence on the knowledge that will be collected. This paper separates observation into two overall methods that are applicable at different point in the product development process:

1) Observation of the current actions of users
2) Observation of user interaction with the new product

This section will discuss the first of these, while the latter technique is the topic of section 6.2.4, which will highlight observation methods that are particularly useful once a concept has been formulated.

A relevant question is how current actions can be observed if no product yet exists. The answer is that it is the use situation that is of relevance. Even if no competitor products exists, the situation in which the product is supposed to be used can be observed. For instance, standing in a supermarket observing how people make choices about wine purchases can confirm the value of an accessible wine-review app such as Vivino (Appendix 1, X2). Observing the use situation thus makes the researcher less dependant on the user's ability to express his needs and opinions, as well as on his ability to remember the feelings and reasoning he went through in the use situation (Kristensson et al 2008). By not relying on expressibility of user value, latent needs can be discovered, which is likely to lead to radical innovation. This means that entrepreneurs can learn about needs by simply observing users in their natural environment without asking any questions. This can be a good start for an entrepreneur wishing to identify the user's current problems (Leonard & Rayport 1997; Appendix 1, X2).
However, academics and research experts alike suggests supplementing observation with contextual inquiry, which means to ask the observed user probing questions about his behavior and feelings related to it, typically "why?" (Leonard & Rayport 1997; Appendix 1, X1; X4). This might help understand the observed behavior and is a useful method, not only because it feels comfortable to the informants (Appendix 1, X2) but also because it enables them to express otherwise latent needs by focusing on the real use experience and the problems related to it (Kristensson et al 2008).

This is supported by entrepreneurs, who found the method to be useful for collecting information that is specific to the paradigm they wanted to work within (Appendix 1, E1; E6). However, only two of the entrepreneurs have engaged in exploratory observation. A possible reason for this low number is the aforementioned belief that entrepreneurs already have sufficient knowledge of the problem they are aiming to solve, and thus views it as unnecessary. However, research has found observation to be

one of the most efficient ways of generating high-value ideas for new products (Cooper & Dreher 2010; Leonard & Rayport 1997). Therefore, as argued above, if entrepreneurs are willing to ignore their pre-defined solutions and take one step backwards, exploratory observation is useful for discovering and confirming the existence of solvable problems. In extension of this, observation of the use situation is a relatively low-cost, low-risk research method, and on a material level requires only a camera and a way of taking notes, which can both be accomplished with a smartphone. This should be used to aid the post-observation analysis and reflection, which is an important part of turning the collected information into true knowledge (Leonard & Rayport 1997; Appendix 1, X2). This is also stressed by the anthropologist Diana Forsythe who argues that while research methods can be relatively simple to understand, the analysis of the observations is what creates a good result (1999). However, since entrepreneurs cannot be expected to possess the analytical skills of anthropologists, Grønborg suggests to always analyze the data together with someone else in order to avoid bias (Appendix 1, X2).

Once the analysis is complete, the knowledge can be used to generate potential solutions, although they should not form the only basis for product design. Rather, the insights should be used to inform other user research initiatives, such as in-depth interviews, prototypes, or even quantitative methods such as surveys, to achieve triangulation (Leonard & Rayport 1997; Appendix 1, X2).

6.1.4 Surveys

Surveys are often the first tool that comes to mind when talking about quantitative research. Perhaps this is because of its low cost and the ease of distributing it to a wide range of people using online tools, or because of the relative ease with which the data can be translated into decisions (Rosenø 2005). Whatever the reasons for the general popularity of surveys, they should be applied with care in product development, since - as with all research tools - the information it provides is only as good as the study allows it to be.

The first thing to realize is what sort of information one can expect to gain from a survey. The main critique of surveys is that their focus on product attributes and dependance on expressible needs renders it unsuited to discover hidden needs (van der Hoven et al 2013). While it is true that it is a responsive market research technique (Slater & Narver 1998), this does not mean that it is useless as a tool for product development. It can be used as a quantitative supplement to observation, which

can be useful for evaluating and prioritizing specific product features and for discovering the precise target markets (Rosenø 2005). The point is that surveys should not be used to generate ideas or to evaluate solutions or sales potential: They should be used to identify and validate user needs and user value.

A practical example of how this can be done can be found in the development of Nabby. In the early stages, Dagil used the data he had collected through competitor research to create an online survey. The purpose of this was to identify the product attributes that were the most important to users, which gave him insights into which features to develop (Appendix 1, E1). In his new venture, he has also used surveys to better understand whom the product should be designed for (Ibid). Other entrepreneurs have struggled slightly with narrowing down their audience (Appendix 1, E3; E7) and could possibly have saved time and effort by taking a similar approach. Narrowing down the target audience and learning about what attributes they value the most is helpful when deciding which features to include in a product, which is important to avoid developing too many features (Rosenø 2005; Appendix 1, E1). Based on his experience with surveys, Dagil recommends using them in a certain way: “You can uncover basic needs and trends as well as understand some things, but you can never get solutions from people. And you cannot ask complicated questions and ask people to describe their feelings towards a product” (Appendix 1, E1). These recommendations are very similar to the advice of user research experts who said that the most important thing before starting any study is to know what its purpose and scope is (Appendix 1, X1), as well as who is it for and what outcomes to expect (Appendix 1, X2). That is, surveys are useful for identifying user value when designed correctly. When designed sloppily, they will result in a big pile of useless data, which one entrepreneur learnt the hard way (Appendix 1, E1). MyMonii used surveys to ask the target audience about their behavior and opinions on the topic their products aims to solve (Appendix 1, E2). According to one research expert, this might provide less valid data, due to people’s tendency to give untrue insights on their own current and future behavior. She suggests supplementing surveys with some kind of behavior observation, for instance diaries or observation to overcome this limitation (Appendix 1, X1). Another way in which a survey can become useless, is if it is distributed to people outside the target audience without this being evident from the data, confer section 6.1.1.1, which can easily happen online. However, when used correctly, surveys can help to decrease the importance

of gut-feeling in decision-making (Appendix 1, E1) which seems to make the technique worth the effort.

This rounds off the first groups of user research techniques. Using these methods will enable an entrepreneur to identify user needs and to pinpoint those elements of use situations in which superior user value can be created. In this way, the above research methods validate the existence of a need - the following section concerns how entrepreneurs can identify and validate solutions that satisfy those needs.

6.2 How can the need be satisfied?

Once a need has been validated, the next natural step is to engage in idea-generation activities in order to formulate a concept that can provide superior user value based on the identified need. Since ideation is outside the scope of this paper, this will only receive very limited attention in the following. Instead, this section will skip one step ahead and focus on how entrepreneurs can validate their formulated solutions. The research techniques useful for this include lead users, prototypes, focus groups, and evaluative observation. Furthermore, it will be discussed to what extent suggestions from externals can be of use to entrepreneurs.

6.2.1. Lead users

Although ideation is outside the scope of this paper, there is one relevant point to be made about it: It can be beneficial to include lead users in the process. This section will explain why this is helpful and how lead users can be helpful for user research in general.

Lead users are those expert users - current or potential - whose needs are more advanced than those of the average user and whose present needs can thus become general among the target audience in the future (von Hippel 1986). This means that they are able to articulate needs that are still hidden to the average user. Thus, listening to lead users and involving them in ideation sessions or focus groups can lead to the discovery of latent needs and latent solutions (Narver et al 2004; von Hippel 1986).

Cooperation with lead users does not seem to be a priority for the entrepreneurs in this study, although many of them work with first movers, which will be discussed more in chapter 6.3.2. There are three examples of lead user corporation in this paper. First of all, Firmafon sells a product that they is used by their customer, and thus consider this department to be a type of lead user: They get a lot of valuable feedback through this department (Appendix 1, E6). Francke has also experienced working closely with a lead user: He explains how he once had a beta-testing customer who were so active in the development of the product that he ended up designing half the product for free, which Francke was very pleased with (Appendix 1, E4). This was when he worked with software, as Unity - where the last example of lead user corporation is found - does today. Unity has grown into a large company with a large base of active users, of which a select few experts have been gathered into a so-called alpha group. These are the first to test new features and products and it provides a lot of usable data that Unity can use before releasing the features to beta testers and eventually to all users (Appendix 1, X2). So they take a very structured approach, which is only possible due to the dedication of their customer base. These three examples illustrate that lead users can provide interesting insights for product development, when involved effectively at its various stages.
One last note of caution is that not everyone with specialized needs are lead users. Some might be idiosyncratic and represent market niches (Rosenø 2005), which means that following their insights will not result in products that appeal to the broad market (Kristensson et al 2008).

6.2.2 Prototypes

A prototype is not in itself a user research method, but it is a useful tool for many other research techniques. For the purpose of this paper, a prototype is defined in accordance with Houde & Hill as "any representation of a design idea, regardless of medium" (1997 p. 3). This mean that prototypes can exist in many different forms, all of which have the function of making discussions about new products more concrete (Appendix 1, X1). This section will focus on the elements an entrepreneur should consider before creating and using prototypes as a user research tool.

Earlier in this thesis, many entrepreneurs argued that people have difficulties knowing what is of value to them, before these things exist. This view is supported by theory that contends that people only realize the value of a product once it has been experienced and that the key ingredient in user involvement is for users to learn by doing (Kristensson et al 2008). This is exactly what prototypes are

useful for: Making the planned product and the experience of using it concrete and real to users (Leonard & Rayport 1997; Appendix 1, X1). With such a tool, latent needs can become expressible and it is thus useful for discussing, developing and validating products of radical innovation (Leifer et al 2000 cited in Rosenø 2005). However, for a prototype to be useful it must be tailored to its audience as well as the type of information that it is meant to acquire (Houde & Hill 1997).
The first step in doing this is to realize that a prototype is not supposed to be a representation of the complete product. This would severely limit the usability of prototypes and make it difficult to create them (Ibid). Instead, prototypes are representations of specific aspects of a concept. This means that several prototypes should be created for testing various elements of the product in different stages of product development. In fact, a single prototype is never enough (Buchenau & Suri 2000). In early stages they are useful for concept validation and fostering radical innovation and in later stages they are useful for detailed insights for smaller design changes. In order to explain the usefulness of specific prototypes in specific situations some academic vocabulary should be introduced. This will illuminate how informed decisions about which elements to include and omit in each prototype can be made (Ibid). This is based on Houde & Hill's (1997) definitions:

- Fidelity: describes how close a specific prototype is to the eventual design.
- Resolution: refers to the amount of detail in a prototype.
- 'Role' prototype: A representation of the product's function in a user's life.
- 'Look and feel' prototype: A representation of the user experience, including senses.
- 'Implementation' prototype: A representation of how the product actually works.

These definitions make it clear that prototypes have different levels of complexity and different functions. Based on these definitions and the prototyping activities of entrepreneurs, the following will explain how prototypes can become an integrated part of entrepreneurs' product development from the early phases, without necessarily being expensive, time consuming, and providing confusing feedback.

All of the entrepreneurs in this study have used some form of prototypes. A few of them have prioritized 'implementation' because they want to achieve a basic functionality before testing the concept with potential users (Appendix 1, E4; E8). One argument for this is that the product needs to

work, to at least some degree, before users can imagine using it, but it also relates to sales and intellectual property rights (Ibid). However, as is the argument of this thesis, entrepreneurs' most important design question is not whether the product can work, but whether it solves real problems. This means that entrepreneurs should use 'role' prototypes for concept development before focusing on the details of implementation. Identifying the most important design questions will make it clear what type of prototype to create (Houde & Hill 1997). The most efficient prototype is one that answers the "most important questions *in the least amount of time*" (Houde & Hill 1997, p. 15). Therefore, entrepreneurs should be aware of what they are testing. When they are, prototypes can be used in one-to-one interviews, focus groups, for observation, beta tests and so on (Appendix 1, X1; X2). They are thus useful throughout the development process and could even be used before any part of the product exits physically, through a method know as pretotyping. Pretotyping happens when the entrepreneur pretends to have a working product, in order to validate its role among users (Appendix 1; X3). This method was used by Donkey Republic, who attempted to rent out their personal bikes, prior to acquiring dedicated bikes and software for their bike rental system (Appendix 1; E5). This is a good example of a low-fidelity, low- resolution prototype. Another example of a prototype with high-resolution but with low-fidelity is found in FitDo who used a mock-up of their app to test the role and look and feel on 200 testers (Appendix 1, E3). This did not require any code to be written, as it was created with an online prototype tool, but it was very useful for perfecting the app (Ibid). Yet another example is Scan Unic, who has not yet focused on what their product will look like. For deciding this, they will create 3D models of various elements of the product, which will be tested on the intended users (Appendix 1, E4). These 'look and feel' prototypes will be useful for designing the product to the liking of its actual users, while the core function of the product will be tested with a different prototype that focus solely on the 'role'. This separation of function and feel tests were chosen because "the more finished the product looks, the more people will start to comment on the details" (Appendix 1, E4). This corresponds with the theory presented above, and the point of not making prototypes look more complete than they are is also supported by a user research expert. According to her, this can easily result in the wrong type of feedback, for instance that people will comment on the colours rather than the function, which will be quite useless for concept development (Appendix 1, X2). The best way of avoiding this is to design the prototype specifically to the information that is needed but it is also very important to clearly communicate the purpose of each prototype to its audience (Houde & Hill 1997).

Another form of prototyping was in the form of beta versions, a solution that mainly is applicable in software and is typically used in the final stages of development leading up to the final launch (e.g. Appendix 1, E2; E3). Beta testing *is* a form of user research, but it is mainly useful in later stages of product development (Rosenø 2005), for which reason it will be the topic of section 6.3.2.

All the above demonstrates that as long as a prototype can collect useful information, it can be made of anything from old pizza boxes to complicated 3D simulations. As long as they can achieve their intended purposes, their actual form is irrelevant. For instance, drawings are not useful for explaining the 'role' of a physical product (Appendix 1, X3, E8) but they can be useful for demonstrating the 'look'. When this is understood, prototypes can be an integrated part of other research methods, for instance focus groups.

6.2.3 Focus groups

A focus groups is a well-known qualitative research method, particularly suited for testing new concepts (McQuarrie & McIntyre 1986). In practice, it is a discussion between six to ten members of the target audience under the facilitation of a researcher (Ibid). Typically, the discussion centers around their satisfaction with current solutions, their opinions about the new concept, and their collective assessment of the value it would bring to their lives (Rosenø 2005).

Like surveys, focus groups have received a lot of critique, but one interviewed research expert states that most of this critique is based on misunderstandings of focus groups' purpose (Appendix 1, X1). For instance, the main critique is that focus groups are not useful for identifying latent needs and does not result in radical innovation (Goffin et al 2012 cited in van der Hoven 2013). This critique might be what has caused only a single of the interviewed entrepreneurs to make use of focus groups, however, it is based on a faulty premise: Focus groups are *not* meant to identify problems or formulate solutions (Slater & Narver 1998; van der Hoven et al 2013). One interviewed user research experts explains this by saying that focus groups should be used to look forward in time (Appendix 1, X1). They are useful for comparing attributes, estimating user reactions to new concepts, and to enhance the understanding of users' wants and perceptions (Slater & Narver 1998). In short, they are a way to validate and improve a concept, not to inventing it from scratch. It is thus true that focus groups in themselves are mainly a responsive research method, but it is not correct that they will

always lead to only incremental innovation. Perhaps the use of focus groups is best understood by explaining, wherein their value lies. As mentioned, they should be used to look forward, but not by asking users for solutions. Rather, research experts suggest asking users to rank various attributes or concepts against each other. Not with the purpose of finding the solution users like the most, but with the purpose of learning their reasons for liking or disliking specific aspects (Appendix 1, X1). The value to the researcher is formed in the discussion between members, in which comments from one person triggers reactions from others (McQuarrie & McIntyre 1986; Appendix 1, X1). This is useful because the real value to an entrepreneur lies in understanding the trade-offs customers make between attributes rather than merely knowing which features are preferred (Fenwick 1978 cited in Rosenø 2005).

Since only the NAU-team mentioned having used focus groups, their case will provide the basis for making recommendations for the application of focus groups. NAU used focus groups to gain insights on user opinions by presenting the participants with a very early version of the app, which was at the time still full of bugs (Appendix 1, E7). According to the above, this might have been a slightly late stage to use focus groups. As Gelineck says, the value of focus groups diminishes the closer the product is to being complete (Appendix 1, X1), and having a medium-fidelity, functioning prototype might be a bit late. Schär also states that the NAU-team moved on to other methods relatively quickly, but nevertheless found the focus groups to have been helpful (Appendix 1, E7). A recommendation could thus be to use focus groups sooner, and instead of presenting participants with a version of the real product, a mock-up or other low-fidelity prototype could have been the centre of discussion to test the core 'role' of the concept. This would have saved development time and made the feedback more implementable during development. It is unclear how structured the focus group sessions in NAU were, but the overarching problem with this research method probably is that focus groups are hard to control and the facilitator will inadvertently introduce his own bias into the questioning (Leonard & Rayport 1997). For this reason, user research experts recommends using a skilled facilitator (Appendix 1, X1). However, since entrepreneurs might not be able to prioritize this, one researcher gives some recommendations for successful application of the method: Entrepreneurs should focus on controlling the focus group conversation strictly and make sure to follow a detailed plan for what should happen. If this is done, focus groups are a cheap and quick way to get some feedback on what users could be interested in and what they think of your idea. And an idea is almost

all you need to do a focus group (Ibid). As mentioned, it will be beneficial to center the discussion around a prototype, but this can be done even with a very low-fidelity version in the form of post-it notes and stick figures (Appendix 1, X2). If a concept cannot be explained with a simple prototype, Gelineck suggests making the discussion concrete by centering the discussion on competitor offerings (Appendix 1, X1). In extension of this, an example of a modern and easy research method similar to focus groups can be found in Nabby. When they had to choose a design for their product, they uploaded four different designs to online communities where their target audience was and asked them to describe the designs. They then chose the design where respondents' descriptions best matched the brand Nabby wanted to project (Appendix 1, E1). This is a very time and cost efficient way of getting useful feedback, even though there are also several limitations to this method. For instance it probably only works for design decisions and for concepts that have a specific and connected target audience. However, it demonstrates that focus groups can be very flexible, has a quick turnaround, and are not very expensive (McQuarrie & McIntyre 1986).

6.2.4 Evaluative observation: use of own product

This technique is in many ways similar to exploratory observation, with the key difference that the object of observation is no longer people's current behaviors, but rather it is their interaction with the specific product under development. That is, evaluative observation requires a prototype. Like exploratory observation, it can be performed in a variety of places ranging from people's homes to usability labs and it can take the form of pure observation, or be supplemented with in-depth 1-on-1 interviews, think-aloud tests, and contextual inquiry. Most elements of this method have already been explained in the sections on exploratory observation, prototypes, and focus groups and they will not be repeated here. Instead, it will suffice to yet again underline that the real value of a product is first realized once it is in use (Kristensson et al 2008) and that the closer the test is to mimicking the actual use situation, the more useful information can be accessed (Leonard & Rayport 1997).

Evaluative observation is a very qualitative method that depends on the ability to say something general from specific insights (Appendix 1, X1). Its purpose is to understand how users interact with the product and why this is. In a controllable environment, this can be understood by providing the test user with a task, observe him attempt to complete it using the prototype, and ask probing questions either during or after the task (Appendix 1, X2). It should be stressed that this technique

does not achieve the same purpose as focus groups, although the methods might seem similar. As mentioned, focus groups are useful for looking forward and understanding what users will like or dislike, whereas evaluative observations are more useful for understanding the reasons behind these opinions, mainly by asking a lot of "why"-questions (Appendix 1, X1; X4). By combining observations with explanations this technique allows the entrepreneur to obtain information on both hidden and expressible user value because this method of inquiry helps the user become aware of and articulate his otherwise tacit knowledge (Kristensson et al 2008). Early in the development process this technique can thus be helpful for radical innovation, whereas in later stages it will still be helpful for tweaking and perfecting the product. For this technique to be optimal, five to six users should be observed, one at the time. The insights stagnate at this point and most collected information will become repetitions and a waste of time (Nielsen 2000; Appendix 1, X1; X2). One entrepreneur who used this method was Sørensen, who distributed FitDo's mock-up to approximately 200 people and would sometimes call testers up or sit next to them while they tried to use the mock-up (Appendix 1, E3). While Sørensen found this to be very helpful, it seems from the research experts that it would have been sufficient to do fewer, more structured, observations.

As just stated, evaluative observation can be done in both ends of the NPD process. How this can be done will be described here, by using examples from two of the interviewed entrepreneurs who take a structured approach to innovation. The first of these examples is Scan Unic's before-mentioned product tests in hospitals that have the purpose of confirming the functionality of the product. However, once twenty doctors have tried the prototype, they will also be asked both open and specific questions about their experience of the product and how the product would fit into their routines (Appendix 1, E4). This sounds like a good approach, but it can be improved. First of all, 20 test persons are unnecessarily many. Secondly, the questions will have been pre-written as a questionnaire. While the questions will be asked orally - on the basis that this is more likely to give useful answers than merely handing out the survey (Ibid) - it will also limit the scope within which user value can be found and understood. This is because observation and contextual inquiry is useful for probing questions, not for quantitative analysis and trend spotting like surveys.
The other example is Nabby, who engaged in a very different type of observation and at a much later development stage. When their baby alarm was almost ready for production, they mailed some of them to selected test persons and asked them to record themselves unpack and use the product. This

provided the Nabby team with documentation of the real situation of first-time users which helped Nabby make some minor, but important, changes to the product. Dagil was very pleased with this method, as, according to him, users act in crazy ways that an entrepreneur who is close to his own product could not have foreseen (Appendix 1, E1). This is a cost efficient way to collect useful information, but Dagil also underlines that it takes time for people to send you their recordings and that a lot of them never do so. That is a cost you have to accept (Ibid). This specific method also removes the chance for asking probing questions, which can be a downside, confer the above argumentation.

In general, most of the interviewed entrepreneurs have let people test some form of prototype and have been happy with the feedback, as illustrated from the above three examples. One research consultant also says that in her 5-6 years as a consultant, all of her clients have been satisfied with the decisions to research how users feel about his product (Appendix 1, X1). In this way, entrepreneurs are recommended to engage in evaluative observation. However, they should take a more structured approach to it than is the case now, in order to achieve more useful results in less time.

This rounds off the discussion of the user research techniques that are useful for formulating and validating concepts of user value. Applying these methods will result in products of higher user value, which will increase the chances of achieving new product success. The next section will take a closer look at some techniques that can help validate the demand for the product.

6.3 Does anybody like the solution enough to use it?

This section will cover the big question for an entrepreneur. If nobody wants to buy the product then all the resources spent on development have been wasted. However, if the above methods have been used correctly, the chance of this should have been minimized. At least the product should include a high degree of value to the user, although it might not be high enough to merit the trade-offs of using the product, or it might not be part of a viable business concept. The research techniques in this section are useful for validating the existence of a market for the product.

6.3.1 Selling the product

There is a very simple way to discover if anyone is interested in buying the product: Try to sell it. This sounds straightforward and it actually is. Why it is effective and how to do it will be described here.

As mentioned, several entrepreneurs have experienced a difference between what people say they want and what they actually want (e.g. Appendix 1, E2; E5). Therefore, asking someone "would you buy this product?" will not result in useful data. Therefore, a different approach is needed.
Bundgaard, the research expert with the most experience as an entrepreneur suggests taking an approach that involves commitment from the potential buyer but that does not necessarily involve developing the actual product (Appendix 1, E3). For instance, if you want to sell a product online, you can create a simple website with a "Buy"-button. There is no need to create the entire back-end and functionality of the website, all the knowledge that is needed is whether someone attempts to purchase the product (Ibid). In this way, this validation of the existence of a market could even be done as the first research method, decreasing the importance of some of the above research methods. If the product is not being sold online, there are other ways of getting commitment online as well. For instance, a website with a sign-up button, where people agree to receive emails from you about the concept. This is also a display of interest from users, although not *as* specific as the actual sale. Another option is to run a campaign on kickstarter or a similar crowd-funding platform. The key is to get some form of commitment from the user, rather than just words (Ibid).
Several of the interviewed entrepreneurs have made use of this commitment-from-user approach. Scan Unic for instance, who are developing expensive equipment for hospitals, have signed agreements with hospitals guaranteeing that the hospitals are willing to test the product (Appendix 1, 4). A similar approach was taken by Firmafon who started their venture by creating a demo of their concept and then had customers from day 1 (Appendix 1, E6). Schär is also taking a similar approach in his new venture. In NAU he learned that the real learning comes from trying to sell the product to strangers so this time he made the decision to not build any part of the product before some customers have committed to it in some form (Appendix 1, E7). This requires investment in sales, marketing, and look-and-feel prototypes, but does not require any actual product development and functionality (Ibid). Thus, development costs are minimized until the market demand has been confirmed. These attempted sales could also be a way to identify lead users, since the people who are willing to buy an undeveloped products is likely to suit the description of a lead user.

Overall, this type of 'sale' makes it easy for people to show whether they are interested in the product or not, because it removes the easy and comfortable "yes, I would probably use your product" that is often expressed to spare the feelings of the entrepreneur. Of course, this method requires a clear idea about what the product is, and this might not be known without going through some of the other research methods. So while this method provides concrete validation it will also require much tweaking and guessing of what users want if it is the only research method applied. This might in the end be more time consuming than also conducting other user research, which is why the combination is recommended.

6.3.2 Beta tests

In the section on prototypes it was mentioned that all the interviewed entrepreneurs used these to some extent. In the case of the IT-startups, this was often in the form of beta tests, which cannot really be used for physical products. A beta is a version of the actual product that has not been completely developed. According to theory, beta tests are a way to see if the product works as intended and should always be carried out in users' own environment (Rosenø 2005).

According to the collected data, beta versions are a very popular tool in IT-startups. However, entrepreneurs and experts seems to use beta tests for more than just identifying malfunctions, although it is one of the purposes (Appendix 1, E1; E3; E7). Other purposes include identifying the popularity of specific features and to learn about the users. For instance, NAU launched their app at four different occasions (Appendix 1, E7), Francke had used beta versions as a good, easy, and free way to gather data on users (Appendix 1, E4), and MyMonii is updating their product while users are testing it (Appendix 1, E1). Sending out a product that is not complete is also done in Firmafon, where it is estimated that products that are 80% complete are good enough to ship to users and learn from the response. This is considered a good way of learning fast because it is typically the final 20% development that requires 80% of the development time (Appendix 1, E6). This shows that entrepreneurs consider beta tests not only a way of finding bugs, but also a way of testing the core function of the product (Appendix 1, E1; E5) which happens in parallel with the product development (Appendix 1, E1; E6).

The reason beta tests are good for this is that they show *what* happens and in this way makes it possible for entrepreneurs to make decisions based on actual numbers (Appendix 1, E6; E7). This

identification of how users actually behave will also allow entrepreneurs to choose the best of the above research methods to learn *why* this specific behavior occurs. For instance, when users stopped using MyMonii and Donkey Republic's services, both entrepreneurs reacted by asking these people, why they stopped using it (Appendix 1, E1; E5). This approach is also recommended by Bundgaard: Ideally, he says, the product should be split tested throughout its development, but since most startups do not have enough traffic to get valid data, it will be necessary for them to do qualitative research, for instance by asking the users why they acted as they did (Appendix 1, X3). This form of triangulation that has been mentioned as useful, even important, by research experts several times in the above (Appendix 1, X1; X2; X3)

It should be noted that a beta version is in a way a high-fidelity, high-resolution prototype. For this reason the recommendations for designing prototypes still applies: They should be able to provide the needed information. Since, in this case, this information is in the form of raw data it is important that betas have built-in ways of measuring factors of importance. For instance by supporting split tests or heat maps (Appendix 1, X2; X3). This importance of incorporating basic analytics was also realized by NAU during their experimental beta approach (Appendix 1, E7). This is what is meant by academics when they say that monitoring and feedback processes should be formalized (Rosenø 2005). Formalized monitoring also involves being aware of who is using the beta version. If people outside the target audience is granted access to it the data will be distorted as explained in the beginning of this chapter. This was experienced by one entrepreneur (Appendix 1, E7).

It is interesting to note that while beta versions are mainly applicable to IT-startups the learnings from them are not irellevant for physical products. Entrepreneurs can for instance measure data on product returns and user complaints in order to continuously learn about user vale. This will mainly be relevant after the product is in production, and as such is outside the scope of this paper. The purpose of mentioning it is to underline that user learning is a continuous process that does not stop once the first product has been shipped (Narver et al 2004).

This ends the presentation and evaluation of user research techniques. From this chapter it should be clear how entrepreneurs can practically approach user value learning. No effort has been made to rate the techniques against each other, rather it has been stressed that the best methods depends on the specific product and situation. In this way, it is the responsibility of the individual entrepreneur to

evaluate which techniques can best provide the most needed information in the specific case. It should also be clear by this point that the research techniques cannot be separated neatly into boxes; user research is too flexible for this. Methods can be combined in many different ways and in different orders as long as the entrepreneur takes a structured approach and is aware of what the chosen research methods can and cannot be used for.

From all the above it is clear that continuous user research is useful for NPD in startups and it has been demonstrated how entrepreneurs can ensure the integration of user value learning on both a strategic, tactical, and practical level, as well as what type of results this can lead to.

Chapter 7: Discussion

This chapter will take all the above findings into consideration in order to discuss how entrepreneurs can prioritize and implement user value learning in their product design decisions. It will also be discussed what type of mindset entrepreneurs can adopt to achieve this in practice. The chapter is separated into five parts:

1) Reasons for not learning about user value
2) 'Good enough' user research
3) Learning and developing in parallel
4) Acting on the learning
5) Limitations and future research

7.1 Reasons for not learning about user value

The first thing to realize is that while this thesis has strongly advocated the use of user research, many entrepreneurs have a tendency to not do it to the extent recommended in the above. A few of the entrepreneurs expressed this directly (Appendix 1, E1; E7), while it was indirectly evident in other interviews (Appendix 1, E3; E8). It seems there are three main reasons why entrepreneurs do not always prioritize learning about user value, and understanding these will provide a better foundation for making recommendations.

One reason is that entrepreneurs sometimes believe they know what their product should be, possibly because they are part of their own target audience, as described in chapter 6. As one entrepreneur says: "I think many have a tendency to get too close to their own product. You fall in love with it and can't see the mistakes" (Appendix 1, E1). This justification of not doing user research is interpreted by one research expert as a fear of the consequence of learning the truth about one's product (Appendix 1, X1). This interpretation is shared by Schär, whose experience in NAU is that it was nicer to stay inside and think about new features than learning the truth (Appendix 1, E7).

However, it is not only the fear of hearing truths that cause inertia among entrepreneurs, pride also has a role to play. As explained by experts, entrepreneurs, and academics alike, it is quite challenging - from a personal perspective - to show people an unfinished product that is poorly designed and

nonfunctional, simply because it is connected to the self-esteem of entrepreneurs (Appendix 1, X3; E5; E6; E7; Coman & Ronen 2010). One entrepreneur describes the concept of showing unfinished products to users like this: “It hurts like hell and it’s not fun at all because you have to swallow your pride. But there are no other options in a small team. It is necessary to get input from users in the real world as fast as possible” (Appendix 1, E6). From this it seems that a change in the mindset among entrepreneurs is needed: Accepting a product or feature as ‘good enough’ to use in tests is difficult but useful (Appendix 1, X3). This thesis does not discuss directly how this mindset can be changed, but it is the hope that the arguments presented herein will help convince entrepreneurs that it is necessary. As was described in chapter 5, user learning serves to limit risk, which means that entrepreneurs should be more scared of not learning the truth, than learning it. As one expert says: “The best thing that can happen is that you get a lot of critique” (Appendix 1, X1). One factor that might help change the mindset, however, is the amount of security entrepreneurs feel, and this is the 3rd reason for not engaging in user learning. When entrepreneurs feel secure and do not have much to lose it is easy to postpone learning the potentially uncomfortable truth, as described Schär (Appendix 1, E7). The solution to this, ironically, is to have very limited financial resources . This might sounds slightly strange but it is pointed out by two entrepreneurs that their products benefited from the pressure of validating user needs quickly (Appendix 1, E1; E7). As Schär expressed it, not having money makes you “become more honest with yourself and then you really try to figure out if the product works or not” (Appendix 1, E7).

Based on the above it seem that necessity and deadlines are useful for combatting entrepreneurs’ inertia, and swallowing personal pride is a big part of achieving a different mindset.

7.2 ‘Good enough’ user research

From this it seems that doing things that are ‘good enough’ is relevant for entrepreneurs. This is true for conducting research but also for the design of prototypes that are shown to user and for the foundation on which decisions are based. This will be elaborated on in the remainder of this chapter.

The necessity of doing things that are merely sufficient arises from the disagreement between research experts and entrepreneurs, when it comes to the latter’s ability to perform high quality user

research and analysis. For instance, two of the experts stressed that both the actual research and the analysis should be as objective as possible and it cannot be expected that entrepreneurs are able to disregard their own feeling and opinions (Appendix 1, X1; X2). Entrepreneurs, on the other hand, are typically of the belief that they are able to conduct research that is sufficient for their purposes without the help - and extra costs - of external user research experts (Appendix 1, E2; E4; E5). It is difficult to argue against the increased quality that professional user researchers can bring into a startup's research efforts but one entrepreneur brings up two relevant points: external experts sometimes miss some nuances because they do not understand the product fully, and "it is possible to learn something without conducting perfect tests" (Appendix 1, E4).
This last argument is very interesting. Because while this paper has recommended taking a structured and disciplined approach to user research, this does not mean that research necessarily has to be performed perfectly. Rather, it means that entrepreneurs should be aware of what they want to learn and make use of techniques that provides these insights, as argued in chapter 6. However, as long as this is done, it might be defendable to not take a perfect anthropologic approach. Even the research experts agree that some research is always better than no research (Appendix 1, X1; X2, X3, X4) and some of their recommendations for how to engage in 'good enough' research were presented in the previous chapter. An imperfect approach to analysis might thus be justified, if it leads the entrepreneur to actually engage in user value learning.

Once an entrepreneur has decided to perform user research, the next question is what should be given research priority, since it is not possible for a startup to test everything and some things have to low impact on value be worth testing (Appendix 1, E1). The answer to this, according to entrepreneurs, is to focus on validating those aspects that are at the core of the product (Appendix 1, E2; E4; E6; E7). This might seems obvious, but as already explained in chapter 6, people tend to forget that the details of a product are unimportant, and can even be distorting, for learning about the core functionality of the product. One entrepreneur explains his approach to testing by using a car as an example: "If you have to make a car it is not about making a super nice steering wheel, it's about making a car that is able to drive (...). A lot of people misunderstand this" (Appendix 1, E6). This enforces the argument made so far. Researchers are not opposed to this approach to prioritizing research, but one of them suggests researching different parts of the product with different methods because this will enable the entrepreneur to discover more issues and needs (Appendix 1, X2). It should perhaps, again, be stressed, that entrepreneurs should display care in selecting the specific

research techniques that can provide the relevant information, as explained in the previous chapter. The next section will look more closely at how entrepreneurs can use user insights to inform product design decisions throughout the NPD process.

7.3 Learning and developing in parallel

By now it should have been made very clear that user research should not merely happen before or after the product is developed, but rather throughout the entire NPD process, with the purpose of continuously informing product decisions. This section will discuss how entrepreneurs might apply such continuous product development in practice, keeping the 'good enough' mantra in mind.

This approach starts with the decision to prioritize user value learning. When asked how entrepreneurs should prioritize and conduct user research, all the interviewed experts suggested similar approaches. Generally these centred around actually 'getting it done' right from the start. Several of the research experts suggest dedicating a few days in the early development stages to learn about user value. According to them, these days spent researching will save time in the end and will result in better products (Appendix 1, X2; X4). A strength for startups is that it is possible for them to involve the entire team in this effort, confer chapter 3, which means that they do not have to spend as much time analyzing and documenting their learnings (Appendix 1, X2) to make them understood by the entire organization. Instead they can focus on implementing the findings. This kind of intense user research is similar to the concept of Design Sprints, which is a development philosophy formulated by Google Ventures (Google Ventures n.d.), the effects of which had not received much attention in scientific literature. The question that arise here is how trustworthy the learnings will be, when they are collected over such a short time span. In other words, how much user research is required to justify product design decisions? This question is relevant for any product development team.

One research expert recommends basing decisions on something that is measurable, without being too perfectionistic about statistics, simply because startups do not have access to enough information. According to him, entrepreneurs will have to accept sometimes making product decisions based on a gut feeling that is supported by data (Appendix 1, X3). For example, 18/20 is a

more useful statistic than 490/1000 even though it is less statistically significant. On the topic of basing decisions on 'good enough' research, another expert suggests Design-Thinking as a very relevant approach for entrepreneurs: "Design research concerns discovering, testing, having hypotheses, iterate, and seeing yourself as part of the process as a catalysator for ideas and input" (Appendix 1, X2). This involves engaging in user research with an awareness of one's own bias and to seek to limit its consequence by also using quantitative techniques (Ibid). Taking such an approach acknowledges that entrepreneurs have to make compromises with regards to quality and quantity of data in order to get things done.

One reason decisions sometimes have to be made on imperfect data is that it will take too long for entrepreneurs to collect enough data, and this will make the NPD process slow. For startups trying to get to market quickly speed is of essence. This is a good argument for not doing things perfectly, both when it comes to the statistical significance of data but also when it comes to the design of prototypes and beta versions. Since it is impossible for entrepreneurs to know where their learnings will lead them, it will be a complete waste of time to develop everything perfectly from the start, as stated by one research expert (Appendix 1, X4). In fact, market orientation theory supports this mindset and even recommends to conduct market experiments, learn from the results of these, and integrate these learnings through changes in the product (Slater & Narver 1998). The authors refer to this as a 'probe and learn process', which is a fitting name for the mindset discussed here.

Various interpretations of a probe and learn process are being applied by several of the entrepreneurs in this study. For instance, Donkey Republic, Firmafon, and NAU are very explicit about using this strategy (Appendix 1, E5; E6; E7). They refer to it as 'Lean Startup', which is an unacademic development methodology formulated by Eric Ries in his very popular book of the same name (Ries 2011). The purpose of mentioning the concept of lean startup, is not to discuss the specifics of the approach, but simply to establish that many entrepreneurs take a similar approach. One of the ways in which this can be seen is in entrepreneurs' use of simple versions of their products to get feedback from real and potential users. NAU and Firmafon even takes this approach far enough to actually launch their unfinished products for everyone to use, not just test persons (Appendix 1, E6; E7). In the words of one of the research experts this is a good method because a product that is launched is "worth so much more than a product that is still inside people's heads" (Appendix 1, X3). However, the whole concept of 'launching' is primarily relevant for IT-startups, which is one of the reasons this

thesis has focused more on controlled tests. However, the principle of getting feedback from real users is the same regardless of whether you work with IT or physical products: Their insights can reveal whether the features and ideas entrepreneurs like are in fact irellevant to the user, and can identify more pressing elements, as was experienced by NAU and Nabby when they sold products with features users did not like or care about (Appendix 1, E1; E7). These example from entrepreneurs is the final argument for why entrepreneurs should use research to inform product development throughout the entire development process, rather than developing something for a need that has not been validated.

7.4 Acting on the learnings

While user value research can lead to many useful insights it should also be stressed that entrepreneurs do not have to integrate all of these into their product. Various reasons for not doing so exist and some of these will be discussed in this short section.

Put shortly, this relates to the concept of value *from* the user, explained in chapter 4. Entrepreneurs work within a certain scope of possibilities, which they cannot or will not go beyond in their product development (Appendix 1, X3). For instance, Sørensen explains that decisions in FitDo are sometimes made for the benefit of the customer and sometimes for the sake of the company, because development has to happen in accordance with the vision of the company (Appendix 1, E3). A different example is given by Spant Studio who has experienced situations in which people prefer one material over another, but this material would significantly increase production costs. In such a situation, the users' preferences had to be ignored on account of its potential profitability (Appendix 1, E8). Spant Studio also stress the challenge of balancing the needs of various user groups (Ibid). As mentioned in chapter 4, some products have both users and customers and these might have diverse or even opposing views of what adds value. So, evidently, it is not possible - or required - to always develop the things users request the most.

User research experts seem to agree with this. The important thing, according to them, is to learn from the findings (Appendix 1, X1; X2; X3). User research will sometimes lead to the discovery of improvements that lie outside the scope of possibility and in such scenarios it is acceptable to do the

second best thing instead (Appendix 1, X3). As long as the researcher is aware of this decision the learnings can be integrated into other aspects of the product, for instance the communication surrounding it (Appendix 1, X2). These second best solutions are also a way to focus on the so-called 'low hanging fruit', which are the things that can be done to achieve a lot of impact with only a small amount of effort, which is very relevant to entrepreneurs (Appendix 1, X1; Coman & Ronen 2010). Sometimes user research will reveal big problems or needs but these can be solved with small solutions. For instance, users were confused about how to turn on Nabby's baby alarm, but instead of changing the design of the physical product Nabby decided to reformulate the instruction manual, which solved the problem (Appendix 1, E1). This demonstrates how user learning is useful for entrepreneurs even though it might sometimes lead to findings that cannot be integrated into the product.

7.5 Limitations and future research

The above was a discussion of a mindset entrepreneurs can take to product development. In its nature, the discussion is not based much on scientific facts, which means that the recommendations from this section should only be cautiously followed by entrepreneurs. The rest of the thesis has a stronger scientific foundation but still suffers from certain limitations, which will be presented here.

One possible critique of this thesis is that it is based on the assumption that entrepreneurs are able to conduct useful user research without proper training. Some anthropologist argue that this is not possible (Forsythe 1999) but the thesis does not further explore the validity of this claim. Instead it proposes that entrepreneurs can do it in ways that are 'good enough' for their purposes provided they understand the research techniques and takes a structured approach to learning. This means that the recommendations given here does probably not live up to anthropological research standards.

Another limitation is the use of very diverse entrepreneurs as informants. A more focused paper might have been made by focusing solely on a specific type of business, for instance IT-startups. However, priority was given to the slightly broader research topic in order to increase the transferability of the findings. In this way, the focus on diverse entrepreneurs is actually a strength. Future research could focus on whether these findings are applicable in general and what dimensions should be changed or added in order to make them relevant to specific types of startups.

This section has discussed what mindset an iterative approach to learning and developing in parallel might require. The recommendations are reminiscent of certain unacademic NPD methods, including Design-Thinking, Design Sprints, and Lean Startup. No attempt is made to justify these specific methods but it is interesting that the findings of this thesis somehow support these otherwise unacademic theories. An interesting area for future research could thus be a scientific analysis of these methods' effect on startups' creation of products of superior user value.

Chapter 8: Conclusion

One of the reasons many startups fail is that entrepreneurs develop products that not enough people want to use. This thesis therefore sought to discover how entrepreneurs can efficiently learn about user needs to create products of superior user value. Research on the topic has mainly focused on established companies and has to some extent failed to consider the unique characteristics of startups. Since these characteristics affect the possibilities for user research and product development, the existing theories are not sufficiently useful to entrepreneurs. In this thesis, insights gained from in-depth interviews with entrepreneurs and user research experts were therefore combined to provide an understanding of how entrepreneurs can approach user value learning. It was concluded that a structured approach to continuous learning will be beneficial to entrepreneurs from the early stages of product development, because it enables them to increase the product's user value throughout the entire development process. This approach will result in lower risk and better products.

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Appendix 1: Introduction to respondents and interview summaries

E1: Alex Dagil

Introduction

Alex is a serial entrepreneur in his late 20s. He has previously had success as an entrepreneur when he developed the baby alarm Nabby, which won several awards including the award for best usability at the Danish App Awards in 2013 and a Red Dot Award. This company still does business today but Alex is focusing his attention on developing an app called Hang?. Furthermore he has experience with product development from more established companies. In general he is interested in and knowledgeable about user research, and considers himself to be a practical expert.

Summary

In general Alex takes a structured approach to user and market research. He uses a variety of research techniques ranging from online questionnaires to video-recording use situations. He also spent considerable time researching competitors to learn more about the problem and the market. This was his first step, which was used to create a survey for 500 respondents from the target group. This survey - the 2nd edition of it - confirmed the market need. Then he started developing the product and tested it on individuals in their personal context. Here he found that people do some "crazy things", that you would never have guessed in advance. Once the app was releaced, they updated and developed the software while it was on the market.

Alex is very aware of the purpose of using each method and strives to avoid useless research results by creating good experiments and asking the right questions in the right way.

He is of the conviction that people cannot tell you the solution to their problems, and maybe not even their opinion on your solution, but they can definitely tell you about their problems. This is why he makes use of questionnaires and market research: to uncover problems and to find his target market. The purpose of user research is to eliminate the gut feeling: It is an objective argument.

Alex also recommends talking to people about your concept - sometimes they can see things that you had not thought of, and very rarely anyone attempts to steal your idea.

Even though Alex takes a structured approach to testing he also acknowledge that he could do it more, for instance by using more low-fidelity prototypes. There might be a bit of arrogance stopping him from doing this, and it also requires resources. And some things are simply to low-impact to be worth the trouble. He suggests prioritizing the things that add value and then imitate the rest from others - there is no reason to invent a new function, if someone else has already has done it perfectly.

E2: Louise Ferslev

Introduction

Louise Ferslev is a young entrepreneur in her mid-20s who has spent a couple of years starting her first IT-startup MyMonii. Her company is developing an app that parents can use to pay their childrens' allowance while teaching them about personal economy. She runs the company with the well-known, Danish entrepreneur Thor Angelo.

Summary

In general Louise is of the belief that it is the users that decide what her product should be - she is willing to change the concept if it means that more people will use it. In order to find out what users want she has done some early problem identification to form a concept. This included talking to friends and designing a survey for strangers. The survey supported the belief in a need by asking questions such as: do you give allowance, it is important that your children learns about money etc. Currently she is running user tests on 80-100 users, of which 10 are currently active. She learns based on their actions as well as from communicating with them directly. One thing she really appreciates is that the active testers are not from her personal network - it is people who use the product because it is useful to them. So useful that they are willing to use the product in an unfinished form and to accept the constant changes and updates as well as answering her questions. The purpose of having testers now is to find out whether the core of the product solves an actual problem. For this reason, MyMonii is not currently adding many extra features or worrying too much about the details of the design. She decides on new features simply by measuring how many people ask for them. If enough people ask for something she will consider making it, also using her own gut feeling for decision making. She also separates the wishes into nice to have and need to have. The worst that can happen

is that they spend time developing it and then nobody uses it - then they have learned something and can delete the feature again.
They currently work with first-movers, because a lot of people wait until someone else have gone in front. She express concern that users will not appreciate the beta-version the first time they use it, and then never use the app again. Therefore she want there to be an introduction/guideline for first time users!
Louise is also aware of the difference between what people say they want and what they actually want - she has experienced a lot of compliments about the concept from people who ends up not using the product at all.
When conducting user research Louise takes care to ask open-ended questions and try not to influence the answers she gets. However, she does not strive to do perfect research, as part of being an entrepreneur is to learn things as they unfold. Overall, Louise sees great value in learning from her users.

E3: Emil Sørensen

Introduction

Emil is the founder of FitDo which is an online platform/market place for people interested in fitness and nutrition. He has been part of Copenhagen School of Entrepreneurship and their accelerator program GoGrow. His product is under development and have not yet been launched to the mass market.

Summary

Emil has created a product from the already validated components of other products and put them together in a new solution. According to him, this should result in a product that people will like and that there is a market for. The products is also very based on the fact that Emil is his own customer: He creates this product primarily because he knows that he want to use it himself and that this need will be shared by others.
Emil finds it to be very useful to talk to other people about his product because they can think of something that you had not thought of yourself, but he also believes that you should ignore a lot of the things they say. He talks to as many different people as possible, in order to see if there is a trend

in who thinks which things about it. However, he knows that users do not always understand the vision of the company. He finds it helps on the feedback to show something to customers: design is very important! They won't be able to imagine the product just based on your description of it. They need to experience it, like is the case with a car. Therefore Emil has used clickable mock-ups for 200 users to test - this has given him a lot of very useful information!
He has not launched the full version of the product, but some test versions. Sometimes he sits next to people when they try it, sometimes he talks with them on the phone. He finds it can sometimes be hard to see the difference between a good and a bad decision.

E4: Niklas Stephenson

Introduction

Niklas is a serial entrepreneur and founded his first company when he was 16. He co-founded 3 successful companies by age 25, the latest of which is Firmafon which today has more than 2800 customers. His role in these startups have been VP of product and UX so he can be considered knowledgeable about both entrepreneurship and UX.

Summary

Niklas does not take an academic approach to user research - he has never done user research from an academic perspective to try to find a valid statistic foundation for his decisions. Instead he tries to know his product and audience really well.
He is a user of his own product, which means that development decisions are often based on his own needs and opinions. That is, the development is very driven by the vision of the company. However, they also takes a minimum viable product-approach to development, where a first version of products are created and delivered to the customers quickly, in order to get their use-based feedback. They normally ship products that are 80% done, because the last 20% is what takes the most time. This minimum viable product method, is something they do a lot in Firmafon, because Niklas believes in setting the frame for the answers he seeks. That is, by having an MVP people will talk about the relevant things; by observing how they solve issues now, he will get to know their problems. It is much more useful and you won't be dependent on people's (lack of) ability to express what they really want, and their tendency to give the answers they think you are looking for. He recommends to use

MVPs and to use them for uncovering the core of the product/the things that are important, and not care about the finesse, even though this is hard from a personal pride perspective. It is necessary in order to get useful feedback as soon as possible.
Even with this MVP approach, he also base a lot of decisions on gut feeling: If it feels right to himself it is probably also right to others.

E5: Erdem Ovacik

Introduction

Erdem has started a few businesses, one of which is currently dormant. Now he is focusing full time on his newest startup Donkey Republic, which is a bike sharing service, currently validating their concept through beta tests. Erdem has a McKinsey background and has been working with development for other companies.

The interview

Note: This interview was conducted in English so it has been loosely transcribed rather than summarized.

We did two things that were important to validate. The first step was our search for information. We were really digging deep into the internet and calling people to find out if it existed already. I read about one system - one of our main competitors in the US. I didn't talk to them, but I talked to their customers. That was very interesting to us because their idea was similar, but the execution was different. I called up their operators to find out how their system was working and if the operators were happy - I pretended to be a student who was a potential customer - I call this stealth shopping. Some startups don't want to hear about competitors, but I think you need to talk to those companies that are your competition. So we tried to buy from competition to see what they included in the product and processes.
While the technology was developed we were doing market research: googling and calling as well as testing other systems. Learning from others by using competition and reading surveys about their customers' complaints. Those let us know whether the problems we wanted to solve were actually problems. Some of this was great and useful to us.

Another step we took was pretotyping. You don't need a consultant to help you pretotyping, you can just watch a youtube video. Pretotyping is to pretend you have a product, so we did that with my bike with signs on it, and then offered people to use it. Then we talked to them about what they thought of the concept and how much they would pay for it. And about how their normal procedures were: did they bring a bike on the train (for what price) or would they have an extra one at the station etc. This was in the very early stage.

People will say one thing and then do something else - that is why we need the MVP. The actual development of the product took around 2 years, while we kept doing business plans and market research.

We used the MVP for validation. We bought 25 bikes and put a little sign on it so they look like rental bikes. We placed those bikes in some spots where we expected the core focus groups to be. So we told people "come and use these free bikes, you just need to dl an app". We have 8 bikes in each spot and they would always be used. We then observed if they were using it. There's of course the chance of it getting stolen. These users don't pay but it still proves many things - that our app works, that the smartlock works, that people prefer the bike over bus. We've been doing this for 1½ month.

You have to find the toughest assumption in your business plan and prove them first. If you cant prove them then you have to pivot.

Yesterday we released a new version that adds one more level of commitment (credit card details). So we're taking a step-approach to proving.

We also talk to the users. We sent out surveys, which didnt get that many responses, and we called people which was amazing. We only have few users so surveys did not give usable data and its possible to call, because its so few people. We also call to ask people why they stop using it, and it's not very much because of our system/koncept (*det siger de i hvert fald - men det er jo ikke til at vide om de er høflige*).

We make changes according to what we learn from the tests. We want to be really data-driven and the app is built to measure useful data. As we get more data, we will move away from interviews.

Of couse I think doing research/testing is worth it. A startup is all about discovering knowldge that others dont have. So the secret sauce is not just the hardware and software it is the specific knowledge. And each piece of knowledge improves your product and can convince your investors.

The lean startup principle is an accounting of learning - you make hypothesis and then you build features that can test these. It is knowledge accounting and that is really what we do here: get knowledge by testing things.
The whole business is to learn whether there is a business case. You should not worry about revenue as much as about proving that there is potential for revenue.
I am very structured about what I'm testing. It is urgent that I know why i'm doing a or b, for instance to prove x. If you do not have that dicipline you would not know what you are testing and you could not tell a good story of the viability of the business.
There are a lot of imperfections in our testing and reports. I'm not trying to do it perfect: we get a pretty good idea. It's a balance between execution and analysis.
There's a lot of ridiculing when doing research in public - but you have to do it. There are some very demotivating moments - there are tough days. You can learn a lot if they are willing to speak for even just a minute about their needs - if they hear us out. So you can learn from users that dont end signing up. I think its tremendously valuable to be in the field to talk with users. Instead of outsourcing it. Because we're so small - this is time very well spent! But you also have to do some numbers: How many people are saying what (this is a way to avoid reacting on the wrong things).
We want to listen to the suggestions of users but we are not doing it yet, because there are some core things we want to do first. The features we're doing now are so fundamental that we can't really listen to users' suggestions before they work.
You can't ask people how they would feel using a tablet if they don't know what a tablet is. But you can give them a tablet and then see what they feel like.
It's great to ask users about their complaint with their current solutions and understanding their situation. But don't ask them for the solution. You do the solution and then once you have it they can suggest improvements to the solution.

E6: Kenneth Francke

Introduction

Kenneth is the chief operating officer at Scan Unic. Their main product is a device for disinfecting hands, which will be sold to hospitals. Currently they are filing for patents and are not yet on the market. Apart from having co-founded three startups, Kenneth has experience as business developer

from established companies, such as Radiometer. He considers himself to be an expert on user research.

Summary

Kenneth believes it is important to work at uncovering the needs of users and build them into the product. But he does not believe that users will always have the solutions, because they are simply not very visionary. In fact, he believes that users can sometimes be opposed to change, at least until they can experience the change/product in its full glory.

Kenneth prioritizes getting the technology to work optimally, before he starts involving users. The planned user tests will happen before the final industrial design is made though, in order to get user input on the user experience of the product. Right now Scan Unic is mainly interested in getting the product to function and to ensure that hospitals want to buy the function. Then they can focus on the details of the design and usability later, for which they plan to do user tests of specific elements of the product, e.g. by 3D print.

He has signed agreements with some hospitals, which confirms their willingness to test his prototype, and reportedly, all the hospitals love the concept. While the functionality is being tested at the hospital, the testers will also be asked questions about their opinion on the product and if all of them have the same opinions, it will be taken into consideration for development decisions. To get these answers, Kenneth realize that very open and very specific questions needs to be asked: you're not likely to get useful feedback if you just hand out a survey.

They do all their research themselves: On a limited startup budget investing in professional researchers is not worth the money. Also, because he does not consider perfect research execution and analysis to be necessary, they just need to be able to spot trends. Also, external experts could make mistakes because they don't understand the product well enough.

E7: Patrik Schär

Introduction

Patrik is a young, novice, serial entrepreneur. Has founded the IT-startup NAU, which received funding from the Finnish government but is now dormant. He is currently working on various projects, among which is an e-commerce site that will be a banking platform for loans.

The interview

Note: This interview was conducted in English so it has been loosely transcribed rather than summarized.

The result of our validation is that it needs a huge amount of effort to roll out.
With this kind of social app you either go from place to place and launch repeatedly. Or you have massive power behind like e.g. facebook or invest massively in a marketing push.

It's important WHO you listen to. A lot of entrepreneurs are sorrounded by other entrepreneurs and go to startup events and this is very distracting. And a lot of people develop products to other entrepreneurs because it's so close to them. When you make a social app it is difficult in the start because almost everybody could be your customer. To find your customer you have to narrow down and start with a certain group. The other option is to try to listen to everybody and then you are likely to end up with a lot a lot of features: You build an endless catalogue of features because everybody has..... Most people when asked for feedback don't find it that bright when they don't provide any. They don't want to just say "it's good" they use their whole imagination to come up with something - and a lot of those ideas might not be very good. So you really have to filter. When deciding which features to include, if the team could not agree if it was good, then it wasn't.
We start by collecting a lot of information and then we plan what we would like to do and everything else is put in an idea-basket with potential features.
When you put your product on the market the features in this idea-basket becomes obsolete, because you will realize that there are so many other things you did not think off that are much more pressing. I think we built a lot of stuff that would not have been necessary.

You should actually be talking to people who are your potential customers, not waste time going to startup events. In NAU we talked to other startup but we also did 4 launches in different places: 2 times at a certain university, one with a really early product and one with a later, then one at CBS, and one at a shopping center. The last was problematic, because everybody was there, who were not part of our target audience (non-students). It made it difficult to get much out of the data because we suddendly had users who were different.

It’s very important to have some sort of basic analytics. It is not enough to get the product out, you should also prepare for the questions. If you do a launch with an MVP to get validation you should know what questions you want validated, and make sure your MVP is able to measure those point.
We launched to get validation but I think we did it too late! We had been developing for too long. It is important that you launch a product that works but you dont need all the features. We spent so much time building a chat function because we assumed that we needed it, but I think we could have tested that earlier in a different way.
We did focus group testing but the real learning came when we tried to sell it to people we don’t know, because they are more honest than your friends. I think the focus groups were useful in the very beginning, but you should go away from it relatively early because it is more valid talking to people you don’t know.
What did you learn from f-groups: We did focus groups when we had the first version of the product and it wasn’t working that properly - so we found a lot of bugs, and got a first validation of the need. You have to be careful though, because your friends always like your idea.
I think it would work quite well if you don’t tell anyone it’s yours. Go and show it as if its someone elses - you kind of need to trick people to get an honest answer. The best feedback/validation we got was when we went to universities and tried to do sales to strangers. Not just from the sales but also from checking what the results are - you need to validate it with numbers of what they actually do.
We also contacted random users with random emails to collect feedback but it wasn’t that useful because they were to nice or afraid to say something wrong. A lot of answers were “it was really nice and maybe I’ll use it later blah blah”.
That we launched unfinished products of course also affect the kind of feedback we got.
We spent money because we had money available but I’m not sure this was good. Having money available makes you lazier. If you don’t have money you need more validation faster because you need to reach growth and numbers. Going out and talking to people isnt always that nice. It might be nicer to stay inside and think about new features. I think we would have reached our conclusions faster without the money. If you can’t afford dinner next month you also become more honest with yourself and then you really try to figure out if it works or not. Also because you might be scared of the truth. So you keep making the product a bit nicer before you ask people what they think. You can’t do this if you have a deadline.

The data needed is different for every business. Numbers can be good for investors, but they can also be in the form of partnerships, sales, active users whatever. The number that is the most important driver in your business case. Whether it is subscribing, buying, signing up etc.
You can also focus on numbers that are not important: One of our blog posts had a 1000 reads which feels nice but are not useful for success. It is vanity metrics.
You cannot take lean startup as an excuse to put crap on the market. Structure became very important to us, but that can't be excused with that you're a startup.
I will do a lot of things differently now than in NAU. I will be much more structured in deciding when we move what to the market. What stage should the product be when we move it to the users.
On the banking platform we have decided not to build anything before we have commitment from a banking institution. So we do sales before we build anything. We invest more in building marketing brochures and built the product on a paper, so it looks built. The people we talk to cannot see what works - the people we talk to now just needs to see it.

E8: Troels Thorbjørnson

Introduction

Troels is educated to be an architect and has been running his startup Spant Studio for a few years. They have won several design awards for their AA Desk and Sissy Lamp. The former of these is in production and can be bought in more than 10 countries.

Summary

Troels does not attempt to follow the trends, rather he focus on the way in which people use products. That is, he focus on their functionality, from a problem-based stand-point. They know what the problems are with e.g. desks from their own life, so they don't need to ask anyone. Also, they design things that they themselves would like to use, and do not consider the business aspects very much. One of the reasons for not talking to users is that it just hasn't seemed necessary yet. As architects they are educated to imagine other people's needs and so far they have only designed things for people they identify with. Also, they have had success, with what they have done so far, so it does not seem necessary yet - but he is not against including users more, if it's necessary.

He does not go out and ask the users what they would like, but they are open to suggestions for products they could make - The Sissy Lamp is an example of this, as is the table they are currently working on.
He is a visionary in the sense that he does not attempt to design according to trends, rather he attempts to design something different that can be an inspiration for trends. In this way he does not think users are able to express what they want, unless they are talking about specific attributes, such as materials. However, it's not always possible to listen to these opinions due to production costs.

X1: Nanna Gelineck

Introduction

Nanna is a usability specialist at Adapt, who develops and implements large web-based projects. She has a master's degree in ethnology and is an expert on all methods of qualitative research and masters a significant amount of quantitative methods as well. She has experience with placing usability and the customer experience at the core of the business and has previously worked with market analysis.

Summary

Nanna works in a company that uses agile development. This means that each project and test only takes a few days.
She speaks at length about different methods, how to use them, and when in the process they are useful. Some of the methods discussed are 1-o- 1 interviews, workshops, focus groups, usability tests, eye tracking, co-creation, and wireframes. She also shares her opinion on listening to customers. She completely agrees with many others that users don't know what they want if they are asked - they don't have a true insight on themselves, even if asked to explain their normal behavior. For this reason she always includes some type of behavior observation.The task for a researcher is to find the right way to get true knowledge. This can for instance be through observation, poking questions, saying "why?" a lot, asking for diaries, and by given them some concrete tasks, to put them in a real situation. Also, one of the most important things according to her, is that the people you talk to are representative of your core user group. If not the data will be useless. However, when done correct,

user research is very useful: She has worked with this for 6 years and have never experienced a client who was not very happy about learning about their customers' opinions on their products.
In general, she recommends to be very careful when carrying out research about your own product because it is easy to get incorrect data and interpret it the wrong way. It will often suffer from confirmation bias and other factors that relates to not being a professional researcher. Also, to do any research you need to be aware of its purpose and scope, otherwise you'll get diverse and unstructured results.
Her recommendation for startups is to do user research as soon as possible, even though it might be hard to hear the truth. The best possible outcome is for you to get a lot of critique. She also really stresses the importance of talking to the right people and of giving them something concrete to talk about. She thinks it's true that it can be harder to test a completely unique product, but there are always ways of testing it.

X2: Kirsten Grønborg

Introduction

Kirsten is a user experience researcher at the software company Unity. She was the first person with that title in Unity and has been involved in building the entire UX department in Unity, which now includes three researchers and two designers in Denmark. Her expertise includes usability testing and user research and she has previously lectured in interaction at the Copenhagen School of Design Technology. Kirsten's insights add a unique dimension to this thesis because she is the only interviewed expert who works within a company, which means that she has knowledge of the entire NPD process, whereas the other consultants are not always part of NPD from start to finish.

Summary

In the beginning the people behind Unity were developing a product for themselves, so they did not need to talk to that many other users. It has been very focused on development. Today they use their user community a lot - there are over a million members, so there is plenty of access to user information. For this reason it is not that hard for them to test with users and they do it a lot: Alpha users are the evangelists that get access to new features faster and are very active with feedback.

There is also beta testers, which is a larger group of people with less specific knowledge, also giving feedback.
In Unity's early years they have made the mistake of using UX in the end of projects to confirm that users know how to use the product, rather than as an integrated part of the entire development. Kirsten believes that the latter should be done because UX belongs in the entire organization, and this is currently changing in Unity.
When Kirsten was hired it was to conduct think-aloud tests but she has since added new methods. These include methods such as observation, card sorting, eye tracking, contextual enquiry (which is a think aloud test performed in the user's own environment), paper prototyping, KANO method, surveys. She has a specific system that makes it clear to her which elements of a product should be improved. In short, it is a matrix that takes into account how well the tester completed each task and how easy he thought it was.
When doing qualitative testing, Kirsten believes that 5-6 user tests are enough, but she often sets up a few more, because they can get cancelled or similar - and then she always records the sessions and reflects on it with a 2nd person.
Her main point is that one kind of test is never enough and that you should use different types of tests in different phases of the project, preferably to achieve triangulation.
She also strongly believes that any kind of test is better than no test, even though this is no excuse to perform bad testing. For startups she recommends setting time of to go out and learn - maybe just do some quick and dirty observation and interviews over 3 days or so, with the entire team.
Everyone can learn how to do UX research and she thinks entrepreneurs should strive to do it early on in their process. Actually it is a positive thing that prototypes don't look finished when they are shown to users.

X3: Frederik Bundgaard

Introduction

Frederik is the founder of the consultancy UX Mentor. He is an expert on user experience and usability. According to himself he often has the task of making a connection between user experience and technology in projects. He is relevant for this paper, primarily through his knowledge on user experience, but his experience as an entrepreneur adds a useful extra element to his insights.

Summary

Frederik says that the choice of research method is very dependant on the specific company and product. Sometimes you need a high fidelity prototype, sometimes a mockup is enough. The important thing is that you start by identifying a need, rather than a product. He also stresses the importance of asking the right people. Unless it's hardcore usability and you just have to know if the product is possible to use, then you should test with the relevant people. That's super important! Basically, user research is craft, that you need to do correctly, in order to get useful data.

He is also a believer in the lean startup mindset, which stress the importance of getting out of the building and doing tests quickly, even though it seems scary and you risk your professional pride. Sometimes its important to just do the second best thing. You don't need a functional product to get useful feedback. Pretotyping is a good way of discovering things about your concept without actually developing it. The task is to present something to user they can really have an opinion on.

According to Frederik it is easy to find out if people are interested or not. You can judge it by their commitment. For instance, trying to sell something will get you a clearer answer than asking if they would buy it.

He realizes that a lot of startups don't have access to enough data from technology to make split tests and statistically significant data collection. So it should be used as an indicator, not as a truth. Then you have to use qualitative data to attempt to answer 'why'. Again, some data is better than none and if it improves your business then the statistical foundation might be less important. But knowledge is always knowledge and can be used for something. In extension of this, deadlines are useful because they force you to move on, instead of trying to collect slightly more significant data. 19/20 can be more significant that 101/200. Frederik also respects the entrepreneur's choice to use the the collected data however he wants, because there are restricting factors for what can be done in product development, for instance the scope and strategy of the startup.

X4: Lene Karup

Introduction

Lene is a self-employed interaction designer who works with development of new concepts and strategies within design and branding. She has an educational background within graphic design,

innovation, and interaction design. Lene's main interest is within design but in her position this often overlaps with usability and she is therefore qualified to answer questions on data collection on user needs. It should be mentioned that this was the first interview to be conducted, and the topic of the thesis has since changed slightly. The insights from this interview are therefore not as relevant as the other 11, but since the method and mindset taken to website testing overlaps with that of concept testing, the insights from this interview will be used to the extent possible.

Summary

One thing that were discussed much during this interview was what the right amount of research is on a limited budget. Lene says that in theory it is possible to do everything but in reality there is never time and money to do everything, which is why you need to use only the research methods that are most relevant at the specific point in time. It is important to know why you choose the specific method and what you want to gain from it. She often experience that her clients think they know what they want, because they think they know what their customers want. When this happens, Lene asks if this is something the client knows or something they think they know. She then recommends doing some research to find out who is interested in the things they are creating, to avoid wasting a lot of time. She advocates strongly for asking "why?" and listening to the answers in order to understand the real message, and the real need, rather than the one being expressed.

Lene also considers it a waste of time to create everything perfectly from the start. This is because a project can change a lot during its development and you never know where you will end up. Therefore it is important to create something not-perfect to get going, and then you can maybe earn some money to do more user research.

Typically, a problem for Lene is that she spends too much time on tasks, because it is professionally difficult to not do a perfect job - but it is necessary, due to the limited resources of her clients.

She also prefers to involve all the relevant in-house stakeholders, because it gives them ownership and a much better understanding of the value of UX and its effects.

Finally she stresses that sometimes the only way to learn is by doing.

Appendix 2: Interview guide for entrepreneurs

The respondent's experience:

- What is your current position?
- What is your experience with entrepreneurship?
- Do you have experience with user research?
- Could you share some of that experience? With examples?

Questions about respondent's experience with, and opinions on, user research:

- What kind of user research did you do?
- Which tools and methods did you use?
- At what point in your process did you do what types of research?
- Were you very aware of what specifically you were researching?

- Did you meet any obstacles in your research activities?
- Was it difficult to do user research?
- Was doing user research worth the effort?
- Is there any situations where it is not worthwhile?
- What are the reasons behind choosing not to do research?

- Do you think the users can tell you what they want/need?
- Have you experienced that users were less useful because your product is radical?
- Did you use the feedback that you received - why/why not?
- How do you decide what input from users to listen to and what to ignore?

- Do you attempt to conduct perfect research?

- Is there anything that you feel is relevant that you want to add?

Appendix 3: Interview guide for user research experts

The respondent's experience:

- What is your current job title?
- For how long have you worked with user research?
- What is your educational background?
- What type of projects have you worked on?

Questions about the process of user research:

- Where/how do you start in a new project?
- At what point in the product development process do you typically enter?
- What is the first thing you do and why? How do you decide what to do first?
- What about the rest of the process? What are the steps? Can you describe a typical process?
- Are there things you always do or is it unique for each project?
- Are there any tools/techniques that are particularly useful?
- If it is always possible to test more, how do you know that you have enough information?
- How thorough and perfectionistic do you need to be when collecting data/designing experiments?

- What are some typical problems?
- How do you avoid being biased?
- How do you decide when to ignore the users?
- How do you know what is a wish and what is a need? Is there any way to identify the core of the product?
- How much do the company's wishes influence the final product?

- With whom should you communicate throughout the project?
- How do you justify/sell the value of your work to clients?
- How do you measure success?