



Market research on the project management needs of small to medium sized technology companies in Finland.

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BACHELOR'S THESIS
March 2021

International Business

ABSTRACT

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Market research on the project management needs of small to medium sized technology companies in Finland.

Bachelor's thesis 42 pages, of which appendices 1 page.

October 2021

Start-up companies have a hard time deciding what type of market segment they should concentrate on, to achieve their first sales. Most entrepreneurs believe that they miss out if they do not take on every potential market opportunity they can. It is well documented however, that by concentrating on the right market niche a company has a greater chance at success than by trying to sell their products or services to everyone who resides in a certain market. This study aims to identify the needs of a specific market segment and see if the needs are matched with the solution that is provided by the commissioner of this study. In this context the market segment is small to medium sized information technology companies that reside in Finland.

To test the hypothesis of are the needs of this market segment matched with the commissioner's services, interviews were conducted with 7 different companies of various sizes who belonged to this market segment. The results were then analysed by using thematic analysis. The findings showed companies within this market segment did not have needs that could be resolved with the current solution that the commissioner has.

The results do suggest however, that there is a need for communication and transparency training within the market segment. This has potential benefit for the commissioner, as clear project management also allows for transparency within an organization. These findings have a potential of showing up in further research with larger companies. Therefore, by having a good communication and transparency package included in the commissioners' services, the results for growth and sales are potentially very high.

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GLOSSARY or ABBREVIATIONS AND TERMS (choose one or other)

SME	Small to Medium Enterprise
Agile	Programming methodology that was created in 1980, whereby the emphasis is on efficient software design.
B2B	Business to business.
B2C	Business to consumer
TAM	Total Addressable market size

1 INTRODUCTION

1.1 Commissioner

Companies waste huge amounts of money on failed projects that have had ambitious delivery times and underestimated budgets. In fact, 70% of IT projects overrun in terms of scheduling and 27% of IT projects overrun in costs, and those which were overrun were 200% over their original budget (Gallup management journal). Cost estimation can be very difficult, and it can result from several different variables. A study by Alber. L Lederer and Jayesh Prasad (1995, p. 127) discovered that there were 24 different reasons for inaccurate estimates.

A Ph.D student Jussi Niutanen has extensive experience in IT and software project management. He is currently creating his doctoral thesis on the topic of data driven agility and its application to the issue of cost estimation in projects. Jussi has worked with big companies such as Intel, Nokia and Ettenplan where he had the chance to test his theory of data driven project management. As a result of his case studies, at both companies he was able to accurately estimate the time it would take for a project to be completed from start to finish. His method is based on his recent academic research with the emphasis on estimating how long a project will take. By using a tool called Jira, provided by the company Atlassian, he has managed to create a system where one can combine the methods of Kanban and scrum. In addition, the method is adopted and used in this thesis.

The new model of agile is based around data-driven decision making. It combines the agile methodology with other methodologies such as waterfall in order to create a tool that allows for customers to manage their projects in the most efficient way possible. In the thesis I will be measuring the demand for the new model of agile that has presented by the Ph.D. Student Jussi Niutanen. The commissioner has not yet started their own company but is in need of research measuring the market demand for the service in different sectors. The business model of the start-up company is to consult current companies on their agile working frameworks and what tools they use in order to manage their projects.

This thesis will concentrate on researching how much demand there is for a consultation service that specializes in estimating costs and deadlines for projects through the use of grounded theory. The focus of this thesis is to gather qualitative data. The research method is open structured interviews and the target group is project managers and owners of small and midsize companies.

1.2 Objective, purpose and research questions

As the objective of the research is to help the commissioner Jussi Niutanen start up a consultancy company, the first task is to find the best market to target. The commissioner and the researcher had decided to try and find out the compatibility of Small to medium sized companies in the IT sector and their needs with the solution that the commissioner offers as a service. It was argued that as the companies who operate in the IT sector are familiar with the concepts that are involved in the solution, there would be a smaller threshold on teaching the clients on how to use the commissioner's service correctly.

The following research question will be applied to this study as a result.

The primary research question is:

Are the needs of SMEs in the IT sector in terms of project management met by the commissioner's services?

The secondary research questions:

What does a potential customer profile look like?

By answering these research questions, the student will be able to describe the process by which, the start-up should market and start selling its services. The answer to the primary research question will tell the commissioner if this pre-segmented section of the market is a potential candidate for the consultancy companies first sales. This would include answers to questions such as: what field the target customer operates in, what kind of methods they use in their project management already and how large is the company in terms of revenue as well as number of employees.

By answering the second research question, the start-up will be able to determine and answer questions such as: What are the best channels to use and contact potential customers, what time of year would be the best time to contact them, who are the decision makers and who to contact within the company.

2 Theoretical Framework

2.1 Market research and market segmentation

Through primary market research, one can begin to understand the customer and what their pain points are. By inquiring about customers and their struggles one can start to formulate a solution that will then be of great value to them. In Bill Aulet's book, "Disciplined Entrepreneurship: 24 steps towards a successful business" it is highlighted that market segmentation is vital as it allows for an entrepreneur to create a market that they can then dominate with their product or service. (Aulet 2013.)

As pointed out by Renee Diresta, Brady Forrest and Ryan Vinyard (2015), the early identification of potential customers through segmentation, can then help with decisions such as the branding, pricing, marketing strategies and identification of distribution channels. It could be argued an inadequate understanding of one's customer affects all major areas of a company even before creating a business plan. The successful identification of a customer who will be paying for a service is the goal of any start-up (Aulet 2013).

Additionally, most first-time entrepreneurs, as a result of feeling like they are missing opportunities, find it very challenging to concentrate on a single segment as they believe that holding onto more markets might increase their chances of success (Aulet 2013). It is therefore no coincidence that over 50-70% of start-ups fail. With grand ambitions and trying to please everyone, start-ups do not have the resources to facilitate and pursue all of their potential opportunities (Gang 2014).

In Disciplined entrepreneurship 24 steps on establishing a successful start-up. Bill Aulet introduces a concept called a customer end user profile Aulet (2013) defines a profile by 2 things, an end user, and a decision-making unit. The end user is "The individual who will use your product". The decision-making unit is: "the individuals who decide whether the customer will buy your product." The decision-making unit consists of a Champion, a primary economic buyer and influencers, veto power, purchasing department. These individual decision-

makers, depending on an organisations structure, have a vital role in the buying process and therefore a start-up should concentrate on creating a marketing strategy around them.

As the focus of the research is to concentrate on the B2B Market, the purchasing department has the ultimate veto and purchasing power of the whole company. Therefore, by understanding the purchasing departments decision making and how they justify purchases can allow for a better marketing strategy to be formulated.

Understanding and choosing a single market to pursue will allow for the creation of a customer profile which consists of a group of homogenous market opportunities that meet the conditions of a market (Aulet 2013). Decisions are derived from behaviours and therefore it could be argued that concentrating on customers' decision-making process could help a company to get a more concrete grasp of how to sell and create a product or service to its targeted segment (Art Weinstein 2013).

Contrarily David Feinleib (2011) argues that most startups fail due to operating in a too small of a market. By addressing large enough markets, a startup has a better chance of getting a profitable outcome. It is easier to gain and create capital to go into a big market rather than gaining capital from smaller markets. This is why it is important to create estimates such as the total addressable market size (TAM) so that one gets a concrete idea of the number of possible sales the start-up can gain within that addressed market (DiResta et al. 2015).

It is argued by Art Weinsten (2013), that it is simply impossible to try and chase every single market opportunity that presents itself. It is therefore wiser for a marketer to take a strategic approach and segment their market into more manageable opportunities. Doing this, however, does require a certain strategy in order to do segmentation efficiently. Art Weinstein (2013) describes different strategies that one can use in order to make an effective segmentation plan and finally segment the market.

In the B2B market, segmentation is the wisest option to go for when it comes to a company's marketing strategy. There are several to choose from and it is important for the company to understand which one benefits them the most.

There are different strategies when it comes to segmenting one's market: Differentiation, Concentration and finally Atomization. Differentiation is a strategy whereby a company actively markets its products and services to around 2 or more segments. Concentration on the other hand, dedicates serving a single market segment. Finally, Atomization, which is also known as segment-of-one marketing, is one-to-one marketing strategy where the concentration is on the individual customer. Atomization has gathered a lot of attention in the past decade and can be compared to contemporary differentiation segmentation (Table 1).

TABLE 1. Differences between Segmentation and Atomization.

Strategy	Differentiation segmentation	Atomization segmentation
Market Segments	Groups	Individuals
Marketing mix	Same for entire segment	Tailored to each customer
Promotional strategy	Mass communication	Individual addressability
Marketing flexibility	Largely not flexible with a certain period	Highly flexible
Sales initiative	Phone orders, sales calls, web orders,	Real time ordering

While each strategy has its benefits, despite the strategy, the approach will lead to breaking down the market to its most specific detail, which is the individual customer. These strategies of segmentation incur monetary and timely expenses and a company should be aware of the technological and measurement challenges that it entails. (Weinstein 2013, 26 – 29.)

By utilizing Art Weinstein's 3 level program of determining what segment to utilize, one can quickly come up with a plan on what market a company could look at penetrating. The 3 levels of are, level 1 the relevant market, level 2 the Defined market and finally level 3 the target markets. (Weinstein 2013, 26 – 29.)

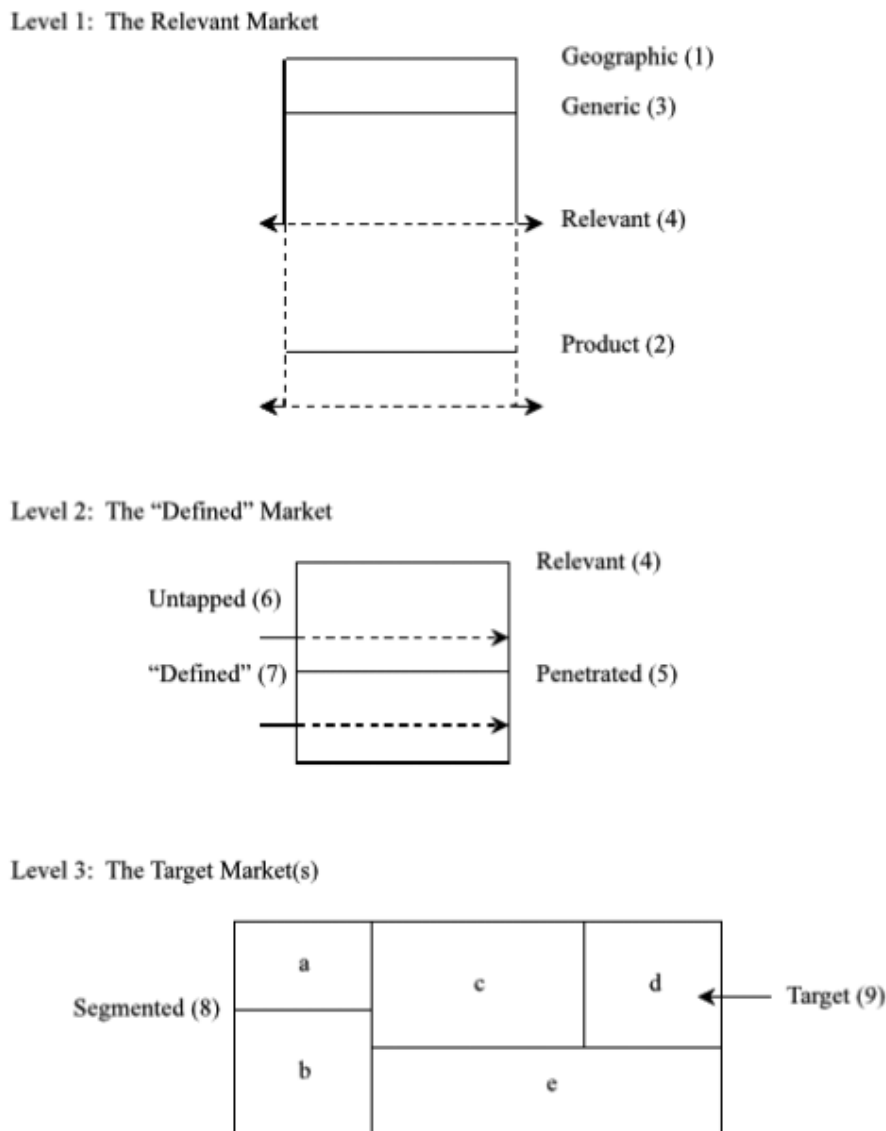


FIGURE 1. Weinstein's 3 level program of determining segment

The first level aims to find the relevant segment to one's market. This includes answering some questions that are in the forms of layers in Weinstein's model. The first level consists of 4 layers which are, identifying the geographic market, product market identification, generic market and finally the relevant market. One can argue that by understanding the relevant market in which to concentrate on, a company will gain a sufficient reality check on what market they should really pursue. As argued by the author, the relevant market, layer 4, gives the management of a company realistic boundaries to govern their marketing strategy. (Weinstein 2013, 27 – 28.)

The second level starts by answering the fourth layer in the first level, the relevant market. The second level is also created of layers that then help to further develop the understanding of the marketplace. These further layers are assessing the current or penetrated customer base, assessing the non-customers or untapped market and re-evaluate the defined market. By answering the questions relating to these layers, the start-up can then proceed to the third layer and start applying segmentation bases to then determine what groups of customers have similar characteristics. (Weinstein 2013, 29.)

The next layers start from the defined market. By linking groups of customers with segmentation bases one starts to be in the eighth layer which is the segmented market. Then finally by selecting a specific target market, one can start to utilize different market differentiation strategies to gain sales (Weinstein 2013, 30). Of all the steps, one can see a simple diagram presented by the author that allows for the commissioner to gain a bigger picture of the market definition model.



FIGURE 2. Relevant market diagram (Weinstein 2013)

By understanding the markets in which a company plans to operate in, it is then wise to create a segmentation plan. For this another model by Weinstein can be used to create a plan for segmentation research. The model consists of 10 tips that the start-up needs to answer in order to create a successful segmentation

plan. 5 of these questions are on segmentation planning and the other 5 were on segmentation research. (Weinstein 2013, 36.)

The segmentation planning points are as follows and will be answered in the analysis section of this thesis.

1. What are the segmentation objectives?
2. What target populations measurement unit are you specifically using?
3. Relevant definitions
4. Recognize segment criteria
5. Select bases for segmentation

Weinstein in his book, continues to describe the next stages of creating research objectives and research questions from the objective. By understanding the objective, one is able to create questions that will be answered and can be translated into useful market data. When analyzing the data, one needs to consider the tangible measurement unit which is the second point of the segmentation planning and research model. This is why a customer decision making unit or a DMU is a thing to consider as this unit will ultimately influence the buying of any services. This decision-making unit in the B2B market is often the purchasing department of a company. (Weinstein 2013, 38.)

By answering questions such as, can one subjectively rank the target market, are the targets or niches a realistic size, can one reach their customer easily and will customers respond to marketing initiatives? one will be able to think whether a market segment is reasonable to pursue. Weinstein recommends that if one has 1 or more negative answer to these questions, a new segment needs to be created and assessed. (Weinstein 2013, 39.)

The criteria for a segment formation are constructed from 2 things. The homogeneity of a market segment and the heterogeneity of a market. These describe the similarities and differences between similar group members. If the market segment that has been created shows a large amount of homogeneity, meaning the segment members have similar buying habit as well as needs, one can deduce that the market opportunity is present within this segment. On the other hand, if there is a lot of heterogeneity within the segment, it means that the

purchasing departments within companies are very different in their decision-making process and can as a result lead to less market opportunities. It is therefore important to reflect upon what is the current market situation and how much information is needed to launch a successful market segmentation strategy. (Weinstein 2013, 39.)

While the theory projected by Weinstein, concentrates on the individual consumer it can be translated into a B2B context. In B2B one needs to think about the individual decision-making unit or purchasing department who makes the decision on whether to buy a product or service. By creating a marketing strategy that is specifically tailored to a decision-making unit, there is a higher chance of creating a sale. (Aulet 2013.)

By fulfilling several conditions of a market a company can link the aforementioned points about homogenous market segments and proceed to creating a marketing strategy that will lead to increased sales. These conditions are the customers within the market buy similar products and have similar sales cycles. They assume that products create value in similar ways as their previous purchases. Finally, there is some indirect marketing, or word of mouth between customers in a market. (Aulet 2013.)

2.2 Research method

Qualitative data analysis tries to describe qualities and characteristics of a researched subject. Qualitative data can be differentiated from quantitative data through the means by which the data is being obtained and the fundamental characteristics of the data. Qualitative data can be obtained through interviews, questionnaires or observations and as a principle it describes certain characteristics of a dataset rather than measure quantities of a certain problem or a solution. (Dewitt Wallace library 2021.)

The term qualitative data analysis describes a wide reach of different methods that can be used to study the natural social life. The umbrella term “qualitative analysis” is a parent to multiple different methods of analyzing and gathering data.

Examples of different methods of qualitative analysis are as follows; Ethnography, Phenomenology, Grounded theory, Case studies, Mixed method research, Narrative inquiry among others. (Leavy 2011.)

As the commissioner has already pre-segmented the market into the subsection of small to medium sized companies within the IT sector, it is therefore important to understand the real needs of the companies that reside within this market segment. By using qualitative analysis, the researcher can answer the main research question and explain whether the market segment needs Jussi Niutanen's services. This therefore allows the commissioner to evaluate, whether the solution that he offers as a service, is matched with the main needs of the potential clients. Therefore, the use of qualitative analysis, was the best option as it allows for the purchasing unit of the company to freely discuss their companies needs and what they would truly require as a service.

3 Thematic Analysis

The study will concentrate on using inductive thematic analysis as it is demonstrated by Virginia Braun and Virginia Clarke (2006) that by using an inductive approach, one will truly be data driven in their analysis and one has a smaller probability of being restricted by preconceived thoughts and paradigms that might occur when tying research to an already existing theory. Thematic analysis is “a method for identifying, analysing, and reporting patterns (themes) within data.” (Braun 2006). The method is commonly used in other forms of qualitative research but is poorly recognized as its own research method (Boyatzis 1998). The method of analysis is however, argued, by Braun and Clarke (2006), to be a foundational corner stone of qualitative research.

Thematic analysis is a form of data coding, which is the process of comprising and classifying different elements in data into separate categories so that it can then be used in data analysis. Most commonly thematic analysis is used in research methods such as grounded theory, phenomenology, and ethnography to refine the scope of raw data that is being used. (Braun & Clarke 2006.)

Braun and Clarke (2006) present in their article that the process of conducting thematic analysis is continuous and writing should be done in conjunction with the data analysis. As a result, potential coding schemes are recommended to be done before data gathering as well as during the analysis of the data. Another point that is made in the article is that a researcher should be narrowing down whether they are using an essentialist or a constructionist epistemology.

The difference being that an essentialist approach concentrates on theorizing motivations, experiences and meaning by analysing meaning, experience, and the language of individuals. Whereas a constructionist approach concentrates on the sociocultural contexts and is a perspective whereby it is believed that experiences are produced socially. (Braun 2006.) This study will be conducted with an essentialist approach as the main research question of the study is who are the first potential customers which can be broken down into finding out the characteristics and motivations of potential customers when buying products or services.

Thematic analysis, apart from other means of data analysis is interdependent of theoretical models and is therefore very flexible. (Braun & Clarke 2006.) Unlike grounded theory, thematic analysis can be a very inductive approach. This means that it is data driven method, whereas grounded theory is locked in a theoretical framework that forces the researcher to make assumptions about the nature of the data. (Braun & Clarke 2006.) Thematic analysis is not necessarily purely data driven, however. According to Braun and Clarke (2006), thematic analysis can also take a theoretical approach, whereby the researcher codes the data in accordance with the research question.

It can be argued that by using theoretical thematic analysis, the data that will be utilized in the final analysis will be “less rich” and that it is more suited towards a specific research question that has been created before analysing the data (Braun & Clarke 2006). As this study is however, utilizing a more theoretical approach, by first creating a research question, this serves the purpose of the study perfectly and is not necessarily a weakness.

By having too much data one would risk saturation. Arguably saturation is the “gold standard by which purposive sample sizes are determined in health science research” (Saunders, Sim, Kingstone, Baker, Waterfield, Bartlam, Burroughs, Jinks 2017) but as the nature of the study had time limits, it would not be feasible to use so much time on receiving “Rich” data that would allow for analysis.

While having a pre-determined code-book to use when starting the coding of ones dataset can be helpful for a researcher who is conducting a realist inductive approach analysis, King (2004) warns that if one has too many pre-defined codes at the start of the analysis process, it might not allow for the consideration of data that conflicts with pre-defined assumptions that were made in the coding stage. This in turn can leave the researcher feeling that they do not have a direction to follow and overwhelmed by the complexity of data that they have gathered. (Nowell, Norris, White & Moules 2017.)

There are multiple phases when conducting Thematic analysis and as such, the researcher should bear in mind the ambition to match thematic analysis on the trustworthy criteria (Nowell et al. 2017).

The trustworthiness of qualitative research was refined by Lincoln and Guba (1985) with measurement of 4 different aspects in order to create a parallel measurable assessment set of criteria for validity and reliability. These criteria are credibility, transferability, dependability, and confirmability.

Credibility of a study is determined by Nowell et al (2017) as “the fit between respondents views and the researcher’s representation of them”. To create credible documentation, Lincoln and Guba (1985) suggest being persistent in observations and triangulating data collection as well as prolonged engagement and peer debriefing. As this study is being created and done by a sole researcher, the use of peer debriefing is not relevant. Also, debriefing findings to a team is not relevant.

Transferability is the general use of the study for future research to come. The researcher is responsible for creating a sufficient description of a study so that future researchers can then use the knowledge learned from the original study in their own sites (Lincoln & Guba 1985). Dependability means that the research that has been made must be thorough in documentation about the research process. This includes attributes such as the research being traceable, clear and logically founded. (Tobin & Begley 2004, 388 - 396.) If the reader is able to follow the process of the research, it is then easier for the reader to judge the research for dependability (Lincoln & Guba 1985).

Confirmability of a study requires that the researcher has fully made their judgements and findings from the data that has been gathered. This requires that the researcher clearly states how conclusions and different interpretations have been acquired through the data. (Tobin & Begley 2004, 388 - 396.) It is also recommended by Koch (1994) that researchers also state the reasons for the theoretical, methodological and analytical choices that were made in order to create a confirmable study.

For this study the student has decided to utilize the guide and material of Braun & Clarke (2006) as well as the paper on creating thematic analysis with accordance to the trustworthy criterion by Nowell et al. (2017), in order to create a reliable and thorough analysis of the data that has been gathered. The analysis will be conducted in 6 separate phases as presented by Braun & Clarke (2006) with each phase bearing in mind the trustworthiness of the study.

The first phase is data familiarization.

In studies that collect speech as a form of data, such as interviews, this step can be argued becomes apparent when transcribing the data from speech to text form. Reissman (1993) argues that while the process of transcribing can become boring and frustrating, it is an excellent way of familiarizing one's self with the data.

The second phase is dedicated to the creation of initial codes for the analysis (Nowell et al, 2017). Codes classify the unique feature of the data, whether semantic or latent, that seems relevant and interesting to the researcher (Braun & Clarke, 2006). As one is structuring and organising one's data into meaningful groups (Tuckett 2005) it is argued by Miles and Huberman (1994) that the process of coding is a part of the analysis itself. An example of initial coding can be seen from the initial data of the research:

Data extract	Code
että sitä saisi esimerkiksi tupla miehitys niin sitten tota sit sen jälkeen se voisikin olla vähän semmoinen että se sekoilu määrä todennäköisesti lisääntyy siinä ja silloin ja pitäis olla mun mielestä enemmän enemmän tavallaan struktuuria	1. Will require more sophisticated system for managing projects when double manpower

FIGURE 3. Data Extract from research

In the third phase, it is the researcher's job to analyse all the codes that they are produced in phase 2. By analysing the initial codes, one can then start to create broader themes to which, they can collate their initial codes to. This phase allows the researcher to form overarching themes from the codes that then guides to a conclusion about the data that has been gathered. When creating themes, one

can utilize visual maps or tables in order to break down and analyse the themes discovered throughout the analysis. (Braun & Clarke 2006.)

A tool that can be used to make the theme collection easier, is called a thematic map. The use of a visual mapping tool can aid the researcher in identifying and collecting themes together. (Nowell et al. 20017.)

After creating an initial thematic map of the coded data, one can start to pick out codes that belong in certain themes. Some codes can seem they might not belong in any theme at all, which is perfectly acceptable and can be put into a group called “miscellaneous”. The map can then be developed further. By identifying the main themes of the coded data, one can start to create a more detailed map about all the existing themes of the research. It is advised that even though some codes do not feel like they belong in any theme, they can still prove valuable to the study and can be combined with other themes to create broader concepts. (Braun & Clarke 2006.)

The fourth phase starts once the researcher has chosen their main themes and wishes to refine them (Braun & Clarke 2006). In this phase the researcher will analyse and deduct whether the codes and themes that have been chosen, create a certain pattern (Nowell et al. 2017). At this point of analysis, any mistakes and errors in initial coding phase will be detected and may require some changes (King 2004). It may become apparent at this point of the analysis that codes might not have enough data to be supported and need to be organised into a separate theme (Braun & Clarke 2006).

In the fifth phase, themes are given concrete names (Braun & Clarke 2006). In this stage the researcher should think about all the themes that have been extracted and how they fit into the overall dataset and research questions (Braun & Clarke 2006). Braun & Clarke (2006) argue that the theme names should be unique and distinguish the themes from each other clearly. This helps the reader to gain an understanding of what the theme is and what it contains. The modification of themes and their names may become a routine at this stage, and it is argued by King (2004) that one of the most difficult things at this stage is deciding when to stop refining and defining themes. To help with this, King (2004)

argues that a person who is conducting research alone, may need to consult external help on theme names and their clarity. It is recommended that before a researcher decides on final names on the themes, they should read the data or text at least twice. (King 2004.) It is important at the end of this phase, according to Braun & Clarke, (2006) that themes have clear descriptions of what they are and what not. Spending time on scrutinizing and developing themes at this stage will increase the probability of credible findings (Lincoln & Guba 1995).

In this sixth and final phase, the researcher needs to create a concrete report. At this point the researcher should have selected their final themes and codes and has now started analyzing the final themes (Braun & Clarke 2006). The findings should be reported in a logical and clear manner. This also applies to the process that lead to the discovery to those findings (Thorne 2000). It is recommended to directly quote from the data in order to create a more detailed picture for the reader in the final report (King 2004).

If one only creates a final report from the codes and themes created, one risks leaving out potentially crucial information for the reader. This in turn does not necessarily give the complex dataset justice and as a result, it will only give the reader a description of the main themes created. It does not explain the themes in any depth, which can be crucial for the reader to fully understand the study. (King 2004.) Braun & Clarke (2006) argue that the original data should be used and quoted to paint a bigger picture to the reader about the study. This will explain the complex data in more detail and as a result also helps explain the validity and the integrity of the analysis. (Braun & Clarke 2006.)

4 Process

4.1 Thesis process

The theoretical framework was written to explain the core theories and concepts that are used in this paper. The thesis process will proceed by writing out the data and research sections. In these sections the student will explain and justify how they have conducted the research and why they believe it is the best way of going about it. After the theoretical framework and the data collection and research parts have been written, the data will be analysed by using thematic analysis. The data will firstly be transcribed after which, it was analysed and written in a format that is easy to understand and interpret. After the analysis was complete, the student proceeded to create suggestions for the start-up, which will be in the discussion part of the paper. The interview questions as well as any material that was used to obtain results, will also be inserted into the appendix.

The timeline was planned in a Gantt chart format. When planning the initial timeline, the researcher opted to use the model from Jussi Niutanen, in order to test the service and give feedback on a single project. Thus, a hybrid model of waterfall, agile and Kanban project methodologies were used to create a plan for the study.

The initial plan for the collection of data was to create a webinar that would attract potential customers to hear more about the service that Jussi Niutanen has to offer. After the webinar, participants would be contacted to take part in an interview. This interview would then be the primary source of the data. Other data, such as the initial participation rate would also be measured to gain a baseline set of data for interest in the service. Here the quantitative data would be analysed to understand what type of businesses would be interested and what fields they operate in. The variables that would have been tracked were the size of company and the industry they operate in. This would allow for the baseline data to be set to then target the right customer group for the interviews. The initial plan was to create the webinar for the start-up sized companies as both the researcher and the client were actively involved in a vast network consisting of mostly start-up organisations.

The original plan unfortunately did not work. Despite efforts and utilization of networks, there were no registrations to the webinar that was organized. As a result, another plan was formulated in order to gain data for the study. One speculation as to why there were no participations, was that these companies that were in the start-up phase simply did not need the service or were not interested in it. Another speculation is that the service tailors heavily to the IT sector as they are more aware of concepts such as Agile, Waterfall, and Kanban. Thus, the webinar would have needed a more targeted approach in gaining participants.

Keeping up with the Gantt chart proved to be more difficult than originally anticipated. As a result, the project started to fall behind the original schedule. The reason for falling behind, started with the dynamic changes of plans, and unrealistic expectations on finishing the project before the summer holidays. With this there were also plans and sparring sessions with the commissioner on improving his services to potential customers. This included some product development and entering competitions such as the Unicorn start-up competition in Tampere.

A plan B was created as a result of inadequate collection of data. As the project was falling behind schedule, fast actions had to be taken in order to try and salvage the original timeline of the project. The Plan B consisted of using the Business Tampere websites tool of searching for different companies to interview. The website provided information such as the websites and contact information from companies that were situated around Tampere.

4.2 Designing data collection

The data was collected using interviews that were held remotely over a Zoom or a Microsoft Teams call. By using conventional methods such as cold calling and emailing, the student directly contacted companies who would fit the target sector. This also allowed for the student to be specific in data gathering and sample group collection.

4.3 Sample groups

The target audience for this research are companies who are in the Small to medium size business range and operate primarily in the IT sector. The reason for this sample group is that the concepts being used in the consultation service, such as Agile and data driven project management, are familiar to the companies operating in the industry. As a result, it is believed that these companies would therefore have a higher likelihood of responding to a webinar invitation or an email asking for them to partake in the research.

4.4 Interview questions

The interview was conducted in a semi-structured format. This allowed for further questioning on certain things a participant might have said while still maintaining a semi-structured format would allow for the data to be compared and analysed.

The interview questions were based around the research questions that the study aims to answer. By using these questions as a baseline, interview questions could be created that would then answer the research question. The questions were formulated in a way so that it would answer these following questions:

Who is the company?
What do they do?
When do they buy?
Where do they buy?
Why do they buy?

The question that is of significant importance is the why do customers buy? This informs the client what are the potential problems that the customer is facing and why would they invest in a solution. By formulating the questions in a way as presented above, the research was able to be conducted in a professional and inquisitive manner which is the key when doing market research on potential customers. (Aulet 2013.)

4.5 Risks

There were some risks involved in the initial plan of data gathering which were offset by then creating a plan B for the future. One of the risks was that people would not show up for the webinar which would mean that not enough data would be able to be gathered about the opinions of the service. The seminar was created and marketed through social media channels as well as through Tribe, which is the start-up community in the heart of Tampere.

Another risk in the process was the people would answer vaguely to interview questions which would mean that the data might not be as rich as one would hope for. Through the contacting process it became apparent that small companies refused interviews as they felt uncomfortable talking about issues that the companies were facing.

A point that also affects the overall research is that the researcher is not experienced in thematic analysis or any other research methodology. This could be seen as a risk as the inexperience could be argued to lead to inaccurate deductions or interpretations of the data and themes that would be identified in the research. On the other hand, through thorough theoretical research the student was able to grasp the core aspects of thematic analysis and its methodologies on how to create a valid and reliable research document.

As the sample group is also quite small there could be argued to be insufficient amount of data to draw deductions from. Saturation is the “gold standard by which purposive sample sizes are determined in health science research” (Saunders et al. 2017). This quote illustrates the importance of having enough data to determine sufficient answers. It could be argued however, that being able to create themes from the answers that were given in the raw data, proves that there was a certain level of saturation of the data as one theme became very apparent which was transparency issues in the organisations.

5 Research findings

The data will be analysed as was presented by V. Braun and V. Clarke in their 6 phase steps whilst bearing in mind the trustworthiness criterion presented by Nowell et al (2017).

The study opted to use a utilize a visual approach, as presented by Braun and Wilkinson (2003) the researcher believed it would be the best form of action in order to comprehend the data and the ideas that were brought up in the answers.

The first phase of the analysis is familiarization with the data (Braun & Carke 2006). This was done by transcribing the data from audio to text form. 7 interviews were transcribed by using Microsoft word.

The researcher was able to familiarize themselves with the data and form an initial analysis (Reissmann 1993). After transcribing the interviews, the data was then coded into its initial codes on Excel as seen in the picture below:

Question	Data extract	Code
What types of projects do you have?	liiketoiminnan ratkaisuja laajalla skaalalla ja vastaa monesta asiakkuudesta ja ja tuota niin niin siinä oikeastaan näin lyhyesti	1. Create corporate solutions 2. Is responsible for multiple clients
Does your company have some sort of project management software?	Me ollaan tosiaan microsoft talo ei mitenkään mitenkään niin kuin Religious mielessä mutta tuota niin ollaan sen asiantuntija tai käytetään hyvin pitkälti Microsoftin työkaluja siellä on siellä on käytössään kaikki projektinhallintatyökalut, photowebit ja sitten totanoin microsoftin plannerit ja teams ympäristöt ja sitten softa projekteissa käytetään myöskin tota Devopsia elikkä microsofting devops työkalua mentelminä nmeillä vaihtelee projekteista toiseen niin on tosiaan agielee leania kanbania sitten palvelumuotoilua siä	1. Does not strictly use, are a microsoft house. 2. Experts working there. 3. Microsoft Planner, Teams environments. 4. Devops system for software
Are you familiar with the terms Kanban and Agile and do you use them in your company?	Kyllä käytetään	1. Do use Agile and Kanban
Is there a certain time of the year when you are looking to buy solutions to project management i.e. tools	ei ole että tarvekohtaisesti:	1. Search for when necessary
Could you describe to me your project management process?	se vaihtelee Hirveästi elikkä tuota se riippuu hirveästi myös tuosta asiakkaiden valmiudesta ja siitä että me ymmärretään asiakkaan ongelma ja varmuuden siitä että meillä on yhteinen ymmärrys asiakkaan kanssa ongelmista mitä tullaan ratkaisemaan ja sitten me varmistetaan myöskin se että asiakkaan asiakkaalta että ongelma on oikeasti se ongelma mitä pitää lähteä ratkaisemaan ja me valitaan sitten ongelmaan oikeat	1. Customer orientated. 2. Dynamic, processes change with customer.

FIGURE 4. Data extracts and initial code drafting

The codes were then cross compared with each question to gain an understanding of initial themes that might come up from answering the questions. The initial themes, as described in step 3 of the proposed guide by Braun and Clarke (2006), were then mapped into a visual mind map and then separated into pieces or themes as shown in figure 5.

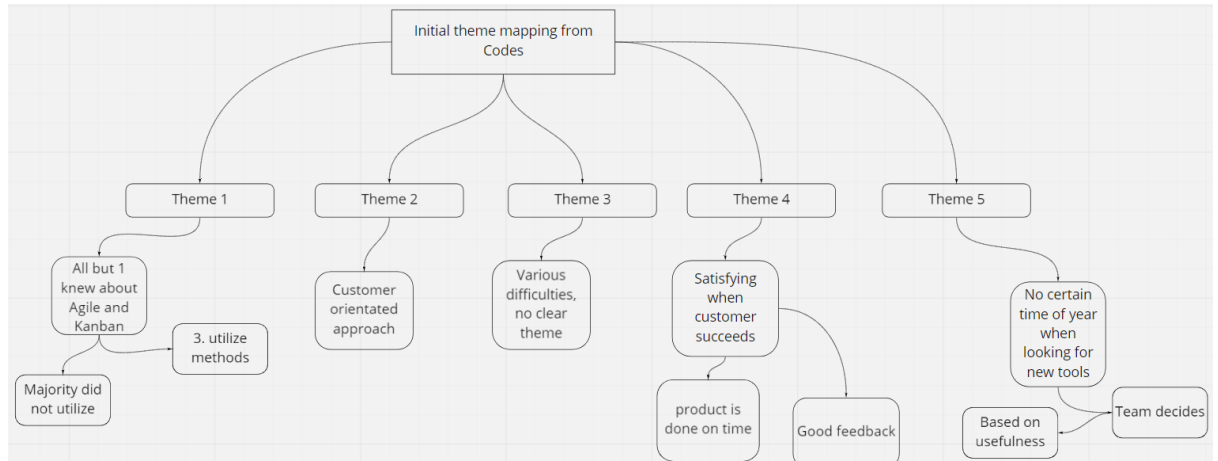


FIGURE 5. Initial theme mapping from codes.

Through these themes it became apparent that the interviewed companies were knowledgeable about Kanban and Agile methods and most of them did utilize the methodologies in some shape or form. Another theme that came up from the codes, is that the companies interviewed highly valued customer success and how their customers would feel after they had delivered their product or service. This theme was shaped by the answers of timely execution and good feedback. Another theme that could be identified from the group of codes, was team orientated decisions. Most of the companies in this data range had small autonomous teams that would decide on using external products or services. A common theme that came about was how do you decide on what service or product to use? When asked the question on what the company's largest difficulty is, no theme could be made due to the answers varying so much. No initial code had any correlation to others due to the nature of the business. One can speculate that the different kind of businesses and their sized would be a prime factor in the participants varying difficulties.

Figure 6. is another snapshot of the themes that were identified from the initial codes.

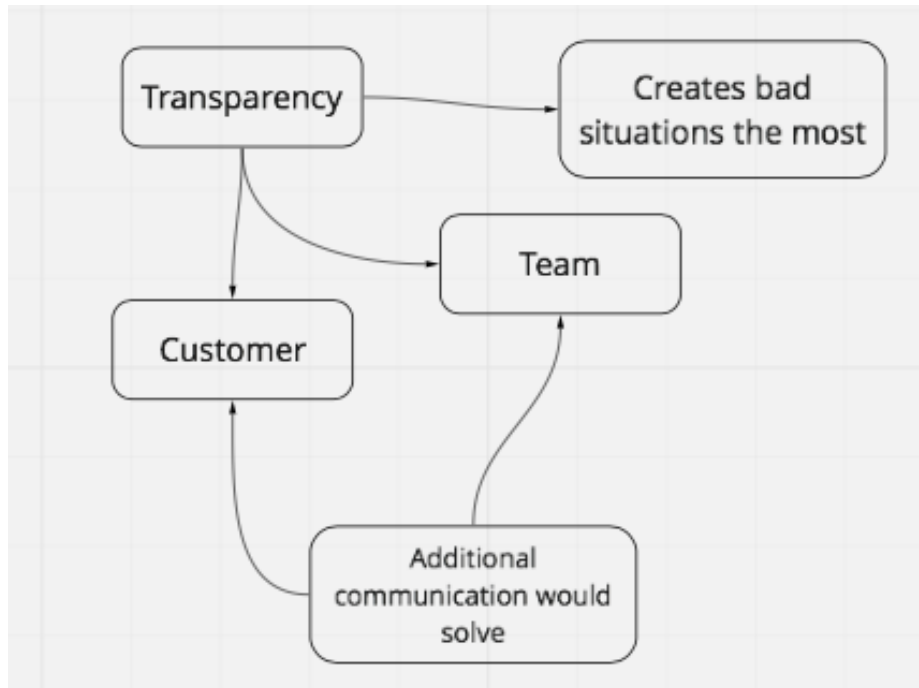


FIGURE 6. Initial theme mapping from codes 2.

From these themes one could create a category that described situations that created the most difficulties for the participants and their companies. A situation that commonly occurred was that the company had a lack of transparency and communication between their customer as well as their employees. As a result, products sometimes did not match the expectation of customers and team members did not understand the features and the greater value that the product gave to the customer. Another theme that was identified was the potential solution to this problem. Most codes hinted towards additional communication that would need to be established in order to eradicate this problem.

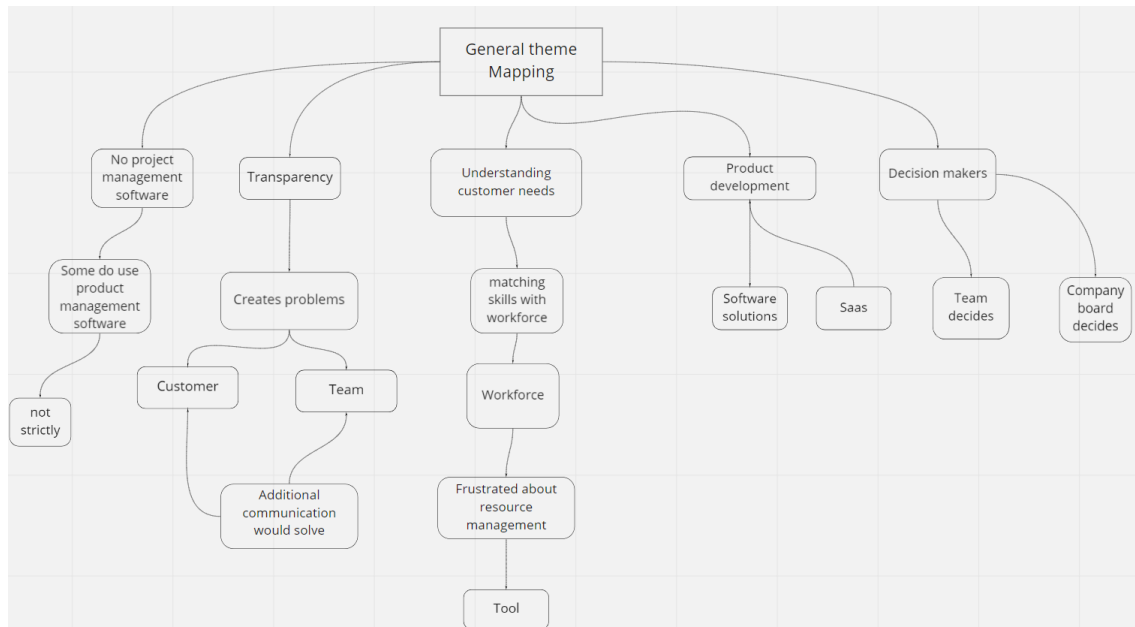


FIGURE 7. General theme mapping from codes 3.

From the final figure of the initial theme creation, there are several themes that link together and thus are clustered quite close to each other. The first cluster from the left describes the status of the company's project management. The second branch describes the main need that the companies needed help with. The third branch is a theme about the main pain points the companies faced. The fourth branch tells what type of company and field they worked in. Most companies were either SaaS companies or created Software solutions for their clients. The final theme is the decision-making unit that the company has. The organisations involved in this research are flat structured and do not have a tall hierarchy in terms of chains of command or communication. Therefore, decisions could be made easily, and teams primarily decide upon the use of tools or services. This results in the whole team being in the decision making-unit.

After the initial theme analysis, one could start to categorize and create a linked overview of the findings. Figure 8. Demonstrates this by linking each theme that was categorized and named.

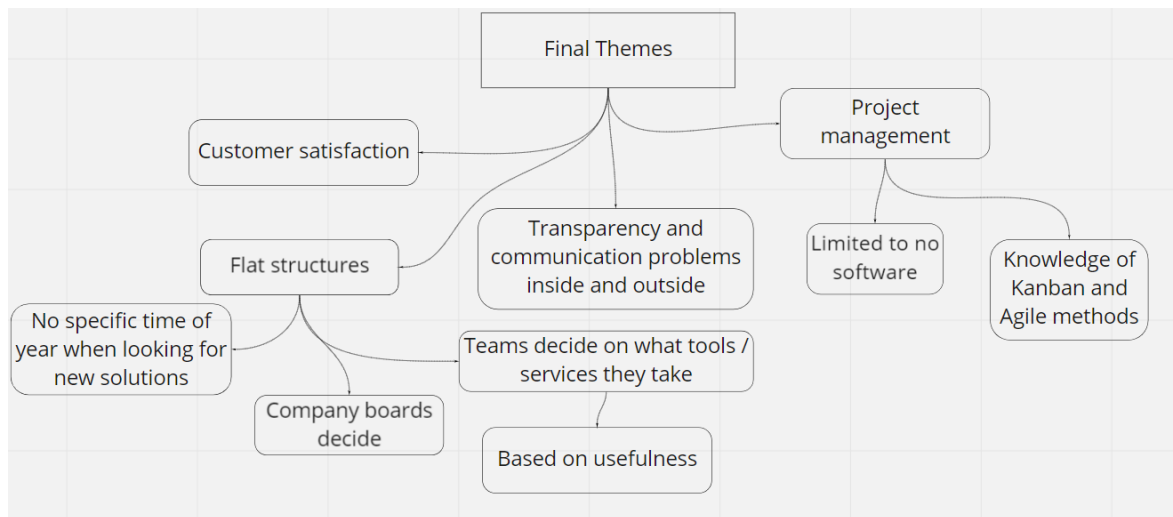


FIGURE 8. General theme identification

For the companies interviewed, the most common pattern was that they valued customer success highly and were always pleased when customer gave good feedback on the product that had been delivered to them.

The main challenges that the companies interviewed had, were transparency and communication problems both inside the organisation as well as with clients. Businesses in this field were very knowledgeable about terms such as Kanban and Agile and the vast majority of them utilized them in their work. Only one company out of the sample was not familiar with the term and did not use some sort of variant of the agile methods.

There was other data that was also collected in the process of the interviews. As the interviews were conducted in a semi-structured format, some questions were not in the main group of questions. The format allowed for further questions to be asked on the spot, when interesting facts occurred, allowing for a larger dataset. This set of other data was then also analysed in the same way as the original set. Examples of the codes and other data can be seen in the figure 9:

Avalosys			
Relates to:	Additional	Data extract	Code
3	Do you think your organisation requires more structure as a result?	että sitä saisi esimerkiksi tupla miehitys niin sitten tota sit sen jälkeen se voisikin olla vähän semmoinen että se sekoilu määrä todennäköisesti lisääntyy siinä ja silloin ja pitäis olla mun mielestä enemmän enemmän tavallaan struktuuria	1. Will require more sophisticated system for managing projects when double manpower
Futuriot			
Relates to:	Additional	Data extract	Code
3	"Onko teillä mitään sisäisiä mittauksia tai KPitä mitä seuraatte?"	Meillä on vaan yksi kappale mitä me seurataan ja sen on net promoter score ja se on tällä hetkellä 75 joka on meidän toimialalla varsin korkea.	1. Follow net promoter score
Avack			
Relates to:	Additional	Data extract	Code
10	Kuulostaa siltä että olisi vaikka jotain markkinointii tai tuoteselitystä ehkä joka	Joo siis sanotaan että mitä isompi se firma on niin sitä enemmän sulla on kontakteja ja vaikutusmahdollisuuksia kilpailuksen ohjaamiseen sun firman tuotteita paremmin niinku suotusammaks niille ku sä saat semmoista alustavaa hyväksyntää et tää vois olla hyvä homma niin silloin sä voit lähtee	1. Market communication
10		Ei ne osaa ostaa. Sen takia niinkun sanottu, jos joku toinen vanhakaltainen konsultti joka on aina toteuttanut näin ja se tekee sen kilpailuksen niin se sulkee sen kilpailuksen uudelle innovatiiviselle ratkaisulle pois. Jos se toisaalta pistää tällaisen uuden innovatiivisen ratkaisun toimintaan laitteeseen minkä laitekehittäjä voi toteuttaa, niin sekään ei toteuta lainkaan vaatimusta kun teet sitä kilpailutusta joka on tehty vain yhdelle firmalle. Mä jossain ilmaisessa foorumissakin luin että suomi tekee itse itsensä kun firmat ei voi tehdä omia tuotteita kun heti kun ne niitä tekee niitä tuotteita jonka voi myydä vaan sulle niin julkinen puoli ei saa sitä ostaa kun se ollaan tehty vain	1. customers do not know how to buy. 2. specifications for products are complex. 3. customer and consumers have different approach methods. 4. Public sector harder to please. 5.

FIGURE 9. Codes

These additional codes gave some insights into the potential customers' problems that they face. One example is that a company felt that the project management software that they were using, called Jira, was simply a tool that did not work for them and they wished to have that changed. This in turn reflected upon their whole interview when they answered questions. This potential customer thought that the main focus of their problems consisted of the bad project management software that they were using. As a result, the participant believed that due to the tool not being adequate for their projects, he did not believe in systematic project and task management, which is precisely what the commissioner is offering as a consultation service. Through the deepening questions it was clear that the participant believed in a gut feeling when it came to managing projects.

Other findings from the additional data confirmed that the potential customers interviewed felt that they do not need a sophisticated project management software or system yet. A pattern from the data indicated that the companies that

were interviewed believed that they would require a system in place for managing their project when their company and workforce would expand. When interviewed, it became clear that the sample consisted of people who worked in small autonomous teams who would decide upon the usefulness of a tool or a system and were not pained by unnecessary bureaucratic steps in their product or service development.

When analysing the data, it also became apparent that the participants were all working in different sectors of the IT industry. As a result, one could argue that the comparison of the data could lead to wrong assumptions, but as the researcher has demonstrated in the analysis prior, it is clear that some themes and correlations can be drawn from the data.

6 Data analysis

The objective of the research is to help a start-up find the first market segment to try and target and gain their first sale. By using the 5-point tips from Art Weinstein's book "Handbook of market segmentation: strategic targeting for business and technology firms" (2013) the researcher was able to create a segmentation plan and research actions. Through the research findings and analysing the data and by answering the questions and referring to the theory, a conclusion was drawn that a new segment might need to be created in order to gain a successful first sale.

The first step was to divide the market into groups such as the company size. The researcher opted to utilize the European union classifications for company sizes based on the amount of revenue the company generated and the staff headcount of the company (Table 2).

TABLE 2. What is an SME ? (European Commission 2003)

Company category	Staff headcount	Turnover	Balance sheet total
Medium sized	< 250	≤ € 50 m	≤ € 43 m
Small	< 50	≤ € 10 m	≤ € 10 m
Micro	< 10	≤ € 2 m	≤ € 2 m

After this, companies would be searched for in the Business Tampere website tool according to these definitions. The goal was to gain at least 3 companies of each category to respond to interviews. Other criteria for the search was that the organisation had to be involved in the information and technology field.

The next step was to create a short list of companies to then contact by cold calling and emailing. Firstly, in the contacting stage, companies would be sent an email inviting them to an interview that would last around 20-30 minutes. The second stage would be to cold call the companies in the short list after a few days

from sending the email. This proved to be the most effective method on gaining participants for the interviews.

By asking the question on “who in your company decides what or when you buy a service or a product in your company?” the idea was to create a clear understanding on what the participant was companies’ structure as well as decision making unit. It became apparent through thematic analysis, that the companies that were interviewed, leaned towards a flat structured organisation and as a result, the decision-making unit was the whole company and teams that worked on projects or a board. This allows for the second point to be answered with what is the measurement unit of the research. As stated previously in the research, the use of the European union’s definition of a small to medium sized business was used but by understanding the decision-making unit of a company, it was clear that the companies interviewed in this research could make decision on buying services quickly and when they saw that they required them. This adds a level of complexity to selling Jussi Niutanen’s services as with this sample unit, it would require proving to the whole team how his method of project and task management would benefit their teams and company as a whole. While the service is a great product to sell, it could be argued that selling would be difficult to teams who are already well versed in their own style of project or task management. The new service would need to be easy to implement and easy to learn in a small space of time. As the sample group was, however well versed in terms and working methods such as Agile and Kanban, this might not be an issue for them to implement a new agile working method.

For relevant definitions, the research aimed to find out the knowledge base of the sample group. As mentioned previously, the service that the commissioner provides is the consultation of project and task management by utilizing a systematic project and task management working method that allows for estimation of future projects. This requires a certain level of understanding about the Agile working method. As stated in the research prior, and as found in the thematic analysis, only three of the 7 companies that were interviewed actually utilized the working methods. All companies except one had the knowledge of Kanban and Agile methods. The IT and programming sector are therefore a valid market to try and penetrate as they are knowledgeable in the subject, but it could

be argued that the needs of this segment do not match the solution that the commissioner is offering.

When looking at the market segmentation criteria, there needs to be a level of homogeneity in the market for it to be perceived as profitable (Weinstein 2013, 39). When the research began, no concrete homogeneity criteria was set apart from the most common issue matching up with the service that Jussi Niutanen is providing. From the analysis, it is clear that the most common issue that the sample group had in its operations was transparency both internally and externally to their customers.

On the one hand, it could be argued that as the homogeneity criteria was not met, this segment would not be a smart choice to pursue in terms of market penetration. As the consultation service that is being provided, concentrates on project management and task management in order to cut costs in wasted time and overrun projects, it can be deduced that the target segment would not meet the criteria for pursuing it as a profitable opportunity. On the other hand, the answers from the interviews allows for an opportunity for growth and development. As the service is not yet in its final form, the answers could be used to further develop the Jussi Niutanen's services, such that concrete packages could be formed on consulting in project and task management, as well transparency through the managing the projects well in a systematic way.

7 Discussion

The research analysis and findings presented a clear answer to the research question that was presented at the start of this paper: “Are the needs of SME’s in the IT sector in terms of project management met by the commissioner’s services?”. By analyzing the findings of the research, one can postulate that the needs of small to medium sized IT companies who are in Tampere Finland, are not matched with the solution that is provided by the commissioner. It can therefore be deduced that the pre-defined market segment is not an ideal area for the commissioner’s first sales opportunities.

As the original plan did not come into fruition with organizing a webinar, one could argue that valuable data was lost as the research was not able to create a baseline of data to create preliminary market research from. On the other hand, it can be argued that this tells the researcher that the market segment that was targeted was not interested in the service and therefore the needs are not matched with the solution that the service provides.

There are, however, other needs that came apparent from the research. This information is relevant as there is an opportunity for the commissioner to develop their services even further. One could also argue that as the needs of the Small to medium sized companies in the IT sector are not mainly based around project and task management but communication and transparency, the commissioner could tailor their services such that it includes communication and transparency training.

Through clear and defined project and task management everyone in an organization understands what the main goals of a project are and what tasks need to be done to reach that said goal. This is a form of transparency, and by including a level of communication training in their services, the commissioner could enhance their services even further and meet the needs of the small to medium sized companies that were interviewed in this research.

The research questions were answered by using semi-structured interviews from companies who were pre-segmented for the research. By pre-segmenting it is

meant that no actual market segmentation or research was done prior to this research and as a result the segment, as presented by Art Weinstein (2013), is in the pre-segmentation phase and the research tried to explore whether this segment was relevant to the commissioner by understanding the customer's needs. The research findings were obtained through interviews and thematic analysis, and one could argue that if there were more than one researcher obtaining and analysing the data, there could be varied opinions about the data and the conclusions that were made from it. This could help with the identifying other themes that might not have been found by the researcher as this was the first time the methodology was used, and the researcher is not an expert in the field.

One could also argue that as this was the first research done by the student with semi-structured interviews, the richness of the data could have suffered due to the lack of expertise. The research was however, conducted with the help of the manual presented Nowell, Norris, White & Moules (2017) which helped the researcher to produce a study that was as valid and reliable as possible.

The main theme that was identified as the need of the interviewed companies was the lack of transparency inside and outside of the organisation. Some companies stated in the interviews, that they sometimes have trouble as the client they are serving, has unrealistic expectations from them. This then in turn presents a problem when they come to discuss the pricing of the service. Another company stated that the communication between clients and the company was difficult, as the company is not able to present their solution to the client clearly enough and as a result, the client is then confused about what they have bought. These companies also stated that they believe that they did not need a project / task management system in place as they are not big enough to be measuring key performance indicators such as the speed at which a project is done and at what pace each worker does their designated task. It is therefore important to take on these comments and concentrate on perhaps another sector which would be large companies in the IT field who are in Finland.

8 Conclusion

The research aimed to identify whether the needs of small to medium sized companies are matched with the solution that the commissioner offers as a service. Based on the qualitative analysis methodology called Thematic analysis, the data was dissected into general themes so that a comparison could be made with each interview. This allowed for the researcher to formulate a clear picture on what were the needs of the SME's in this field. The main need that occurred consecutively was that the SME's had trouble with communicating with their customers as well as their team members. As a result, of this outcome, according to the Weinstein's market segmentation model as well as other literature that was used in this study, it can be summarized that the market segment is not necessarily relevant to the commissioner as the needs of the SME's are not matched with the solution he provides.

The methodology was chosen to be used due to its versatility as well as the amount of information that it can provide. By using thematic analysis, a lot of information can be dissected into a more comprehensible format. The methodology was very effective in answering the research question, as by using interviews to find out the opinions and feelings of the SME's one could produce a summary of the needs of the market segment. The process in gaining the data was also effective as the original plan on organizing a webinar for potential customers did not work. Therefore, using cold calling and emailing to obtain the data proved efficient.

By understanding the actual needs of the market segment, one can then formulate a more detailed plan on how to start selling a product or service. As the research concluded that the needs of the SME's are not met with the commissioner's services, it is therefore advised that another market segment should be targeted. The research gives the commissioner a better understanding of the market and also provides him with concrete primary market research on a specific segment that can be used to develop his services even more. Furthermore, by understanding some problems of the market, they can be accounted for when researching another segment. If in further research, similar

problems / needs occur, the commissioner can then re-evaluate their service model and what they could actually provide.

For the follow-up research, it is recommended that the commissioner would look at the model again, as presented by Art Weinstein. As this research had concluded that Small to medium sized companies might not be the relevant market to try and target the commissioner has a choice to make. The researcher perceives that the best actions to take moving forward are the following:

1. Define another pre-segment of the market and conduct research. Does that segment have similar problems as the aforementioned sample group? The next sample group could be Large IT companies who operate in Finland.
2. Re-evaluate and define the service and think can it be expanded upon to cater for the transparency and communication problem that the sample group expressed as their needs.
3. Create easy to market and understand packages that are easier to explain and sell to potential clients.

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10 Appendix

Appendix 1. Questions used in interviews

1. Who are you and what does your job consist of?
2. What kind of projects are you involved in your company?
3. Do you use any project management software in your company, if so what?
4. Are you familiar with the terms Kanban and Agile and does your company use them in project management?
5. Does your company have a specific time of year when it looks for new services or solutions?
6. Could you describe to me your project management process?
7. What has been the most frustrating experience in your project management career?
8. What has been the most satisfying experience in your project management career?
9. What do you think is the key to good project management?
10. What type of situations cause the largest problems in project management in your company?
11. What in your opinion would solve these problems?
12. Who in your company decides when or what will be bought for the company e.g. a service?