Tuomas Holma

HOW TO CONDUCT A MARKET RESEARCH

For A Start Up Company Providing Mobile Self-care Applications for Public Healthcare Sector
Development of mobile technology is providing new ways of utilization for healthcare sector. At the same time public sector is going through evolution and is looking for more cost efficient solutions.

There is vast amount of mobile application knowhow available in Finland and lots of it is in startup-companies that are born in post Nokia era. Startup-companies aiming to fulfil the needs of public sector must understand those needs. For this knowledge how to conduct a market research is needed.

This thesis is a guide for those startup-companies to conduct market research. Goal is to explain what can be achieved through market research and how it can be done effectively. Idea is also to prepare companies for common problems in process.

Keywords: Startup, Healthcare, eHealth, mHealth, Market research, Institutional Markets
Tuomas Holma

MITEN SUORITTAAMARKKINATUTKIMUS START
UP-YRITYKSELLÄ JOKA TARJOAA MOBIILI
RATKAISUJA JULKISEN TERVEYDENHUOLLON
KÄYTTÖÖN.

Mobiiliteknologian kehitys on luonut uusia tapoja sen hyödyntämiseen
terveydenhuollossa. Samaan aikaan julkinen sektori käy läpi murrosta ja
tarvitsee uusia kustannustehokkaita ratkaisuja.

Suomessa on paljon mobiilisovelluksissa tarvittavaa tietotaitoa. Suuri osa tästä
tietotaidosta on Nokian jälkeiseen aikaan syntyneissä startup-yrityksissä. Että
osa näistä yrityksistä osaisi vastata julkinen sektorin tarpeisiin täytyy niiden
pystyä ymmärtämään nämä tarpeet. Tässä tilanteessa markkinatutkimuksen
tekeminen tulee tarpeeseen.

Tämä opinnäytetyö on opas tällaisille startup-yrityksille. Tavoitteena on esittää
mitä voidaan saavuttaa markkinatutkimuksella ja miten se voidaan tehdä
tehokkaasti. Ajatuksena on myös auttaa yritystä varautumaan ongelmiin jotka
esiintyvät usein prosessin aikana.

ASIASANAT: Startup, Terveydenhuolto, eHealth, mHealth, Markkinatutkimus,
Julkinen sektori
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1: Introduction

This thesis is a guide for a healthcare application startup company that wants to perform a market research on public sector. To achieve this goal the overall terms related to market research, eHealth, features of startup companies and institutional markets are discussed.

First there is discussion about theories to understand basic issues around market research. Technological issues and attributes of institutional markets are also discussed in order to help reader to understand the topic better. Goal is to show what value market research can bring for a startup company and how the process could take place.

Last part is the case study. Case study is an evaluation of a market research process done for a startup-company. This market research was outcome of the student work done during the author’s internship. From the request of the company it is referred as a company-x and the actual results of the research are kept confidential.

1.1 Research questions

“What are the different techniques of market research?”
“How startup-company can use these techniques?”
“How these techniques can be used while doing research on institutional markets?”
2: Market Research

2.1 Market research process

As seen in figure 1 defining the problem and research objectives is the starting point of market research. While defining the problem and objectives of the research the most important thing is to decide right broadness or wideness. Too wide research objectives will have too many things varying and make it harder if not possible to make any certain findings. In the other hand too narrow research objective make it hard to find data to compare with. (Kottler et al. 2009,191)
According to Kottler et al. (2009 192-193) on the stage of developing research plan the following decisions are made; what are the data sources, research instruments, sampling plan and contact methods. Those terms are discussed more thoroughly on the later sections.

Stage of collecting the information is the most expensive and most exposed to errors. The common problems might be related to the respondent’s behavior. Respondent might refuse to co-operate, give dishonest answers etc. Errors can also be related to the technical problems on the used tools. (Kottler et al. 2009, 205-206)

Analysis of the information stage is not all about just analyzing data. Important part of the stage is testing hypothesizes and theories. If company has had some assumptions related to the market this stage where those can be tested. This makes it easier for researcher to give recommendations. Company can so avoid decisions that are based on false assumptions. (Kottler et al. 2009. 206-207)

Presenting the findings is the stage where the researcher should change the data into recommendations. Then company’s management decides what actions should be done based to the received information. Startup-companies do not usually have many decision makers or decision support systems that larger organizations might use. Because of this it is important that the recommendations are well prepared. Videos and photos might be used to make findings easily approachable. (Kottler et al. 2009, 207)
2.2 Types of Marketing Intelligence

Term marketing intelligence is an umbrella term that includes market research. Organizational decision-making does not benefit only from research but also other sources of information. Market intelligence is created by market research surveys. Information about customers held within organizations’ knowledge management systems. The analysis of market trends, developments from a host of sources; and competitor analysis. (Hammersveld et al. 2007,4)

Marketing intelligence can be categorized into groups. These include: evaluating the past, predicting the future, painting a top-level picture, exploring in-depth motivations, describing the world, building theories how the world “works”, monitoring relative change or triggering creative ideas. (Hammersveld et al., 2007,5-8)

First distinction can be made between researches that aim evaluating what went on in past and evaluating what could work in future. These are called as earlier mentioned “evaluating the past” and “predicting the future”. Evaluating past creates hindsight where predicting future creates foresight. It is easier for researches to gain hindsight than foresight as hindsight is built on real experiences of people where foresight is speculation. (Hammersveld et al., 2007,5-6)

Predicting the future is usual goal of the research as companies want to have business foresight. According to Hamersveld et al. (2007,6) the core of the prediction process is to focus on understanding the past and utilizing this information to interpret livelihood of future events Painting a top-level picture is about gaining a general impression of people’s attitudes. Opposite to this kind research is “exploring in-depth motivations”. It is about finding out why some product is favored over other. (Hammersveld et al., 2007,6)
“Describing the world” explains what is happening in world but not why it is happening. Opposite to this kind of research is building theories how world works. Example about research that aims to describe the world could be a survey where people can explain their activity. Market researches can then link this kind of answers to other events taking place and start building theories to explain the cause and effect of relationship. Example of such a research could be research about effectiveness of advertising campaign or price reduction. (Hammersveld et al., 2007,7)

“Monitoring relative change” measures relative movements. These include factors like brand awareness or market share changes. It is not a best way to understand customer satisfaction with a specific product or service but it is effective way to understand long-term customer satisfaction. (Hammersveld et al., 2007,7)

“Triggering the creative ideas” is not about providing objective representative measures of what people think or do. It is more about getting insights about customer and market. Then hopefully these insights will help with new innovations.-(Hammersveld 2008,7-8)
2.3 Data

Understanding attributes of different kind of data is vital for successful market research. According to Kottler et al. (2009,193) data is divided into two main categories; secondary data and primary data. Secondary data is data that has been collected already for another purpose but can be used in the research. This could be for example company’s internal information; like sales data and other financial reports. Primary data means the data that has been specifically collected for the use of ongoing research. Normally market research process is started so that first the researchers look more for secondary data. This is so because secondary data can be found more easily and cheaper. (Kottler, 2009, 193)

Data can also be divided into quantitative data and qualitative data. Quantitative data measures or describes the phenomena through numeral quantities. Computerized systems are increasing the amount of internally created quantitative data. Compared to quantitative data qualitative data normally tries to explain human behavior. It is not just answering questions what, where and when but more to why and how. (Callingham, 2004,79) (Lee Abbott, 2013,36).

The problem with quantitative data is the number of factors affecting it. Other problem is that quantitative market research data is often analyzed by question-to-question basis. This leads to situation where respondent is not treated as a whole object. Therefore information could be lost or used to create false assumptions. To avoid this quantitative data can be integrated with other available information. By doing so there is possibility to get information that is comparable and the factors behind it are well understood. (Callingham, 2004,79)
2.4 Methods of Conducting Market Research

Kottler et al. list five ways that market researchers can collect primary data: through observation, focus groups, surveys, behavioral data and experiments. (Kottler et al. 2009,193)

There are several ways to conduct observational research. Kottler et al. use an example of photo from a Swedish kitchen. They emphasize the amount of information that can be collected about the kitchen related consumption through it. This kind of ethnographic research is way of observational research that uses concepts from social sciences and especially from anthropology. These sciences are needed to bring more insight about the human behavior. Understanding the normal lives of consumers is part of understanding their buying behavior. Observational research is not limited just to consumer markets. This means that in business to business or in institutional markets companies can also use observational research. For example through observing companies behavior to understand if they want to be part of the developing process or to have ready solutions provided for them.(Kotler et al. 2009,193-195)

The development of technology has provided new ways how observation could be done. One of the examples where technology takes part in observation is tracking eye movements. Eye movement monitoring could be used for example to let researchers know what parts of advertising caught the attention of people. Modern technology also allows researchers to measure how interested people are towards the things that they see. (Kottler et al. 2009, 202)

What makes observational research appealing option while conducting market research is that during interview people might be lying. When market researcher is observing traces of the human behavior in real social context there is more certainty that collected data reflects the actual behavior. (Desai 2002, 12)

The focus group research is one way to find out the real motivations behind
behavior. It is done by gathering of six to ten people who are carefully selected by researchers to discuss various research related topics. Sessions are normally recorded and monitored for later observing. The problem is that researchers might do incorrect generalizations over the whole market from the behavior of the focus group. (Kottler et al. 2010, 195)
2.5 Survey Research

Companies undertake surveys to gain information about people’s knowledge, beliefs, preferences and satisfaction. Questions used in survey can be divided into three different groups. These groups are: behavioral, attitudinal and classification questions. (Kottler et al 2009, 197 Hague & Hague 2004, 102).

Behavioral questions are used to find out patterns in human behavior. What respondent does or owns. Also questions related to how often certain behavior takes places or where are behavioral questions. Attitudinal questions are about what people think of certain thing. Often they are addressed by asking respondent to rate something. For example to find out how liked some brand is among customers. Classification data is used so that it is easier to analyze the collected data and do comparison. Examples of classification questions are once related to respondent’s age, gender or size of household. Through behavioral questions market can be segmented to customers who share similar behavior. (Hague & Hague 2004, 102).
When market researchers start to design questionnaire they have to think what is the correct way of getting the data out of respondent.

The behavioral questions address the following:

- Have you ever...?
- Do you ever...?
- Who do you know...?
- When did you last...?
- Which do you do most often...?
- Who does it...?
- How many...?
- Do you have...?
- In what way do you do it...?
- In the future will you...?

While as attitudes are explored using questions that begin with who? what? why? where? when? and how?. Or other similar phrases like ‘would you explain ...?’

Attitudinal questions address the following:

- Why do you...?
- What do you think of...?
- Do you agree or disagree...?
- How do you rate...?
- Which is best (or worst) for...?

(Hague & Hague 2004,102-103)

Scales are used to measure these attitudes. Scales often, but not always, involve numerical measurement. Other possibility is to use verbal rating. The upside of using numbers for measurement is that it is easy for respondent to show their agreement or disagreement. It is also easy to analyze the data latter. Hague & Hague (2010,103-107) different types of rating scales; numerical and verbal rating scales, use of adjectives, use of positioning statements and ranking questions.
Hague & Hague (2004, 103-104) state that verbal rating scales are the simplest of all scales. Using verbal rating works so that respondent chooses a word or phrase from ready given scale that he/she feels indicates the best possible way their feelings. The most common amount of given word possibilities on scale is five.

Example of used verbal scale could be as i.

Table 1. Example of Verbal Scale

How pleased have you been with the service you have received so far?

| Very pleased          |     |
|-----------------------|--|--|
| Quite pleased         |     |
| Neither pleased or displeased |   |
| Quite displeased      |     |
| Very displeased       |     |

Numerical scale has similar approach towards respondent. Instead of what is the most describing word respondent will come up with the numerical score to describe his/hers feelings. 5 and 10 have been popular set for scores used by market researchers. Scores are normally given so that one is the lowest and 10 largest possible score. The larger scale is used the more discrimination is required from the respondent. Also thing to be considered is that if questionnaire is used on telephone interview the large scale is impractical.(Hague et al. 2004, 104-105)
Example of question using numerical rating scale in figure 3.
How pleased have you been with the service you have received so far?

Table 2. Example of Numerical Scale

<table>
<thead>
<tr>
<th>Very pleased</th>
<th>5</th>
<th>4</th>
<th>3</th>
<th>2</th>
<th>1</th>
<th>Not pleased at all</th>
</tr>
</thead>
</table>

According to Hague & Hague (2004, 105) adjectives are often used as a variation for verbal scale. The use of adjectives works so that the respondent has a ready given list of adjectives where can be chosen the ones that describe closest the given issue.

Example question in the use of adjectives in table 3:

Table 3. Example in the Use of Adjectives

What of the following adjectives describe the service you have received?

<table>
<thead>
<tr>
<th>Innovative</th>
<th>Awkward</th>
<th>Professional</th>
</tr>
</thead>
<tbody>
<tr>
<td>Stylish</td>
<td>Old fashioned</td>
<td>Unprofessional</td>
</tr>
<tr>
<td>Fresh</td>
<td>Fluent</td>
<td>Friendly</td>
</tr>
</tbody>
</table>

The usage of positioning statements combines numerical and verbal scale. Respondents are given number of written statements and then they are asked to score them. Numerical Score vary on how much they agree or disagree with statement. It is important when positioning statements are used that the given statements reflect with respondents’ feelings. If given statements seem irrelevant the question will not work. (Hague et al. 2004, 106)
Example question about usage of positioning statements in Table 4.

Table 4. Example of Positioning Statements

<table>
<thead>
<tr>
<th>I have been happy with the service that I have received.</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 2 3 4 5</td>
</tr>
</tbody>
</table>

Ranking questions are used to learn how important different factors are when in comparison. Ranking question is done so that the respondent is given a ready list from various factors. Then respondent is asked to put them in order starting from the most important factor. There is not much sense asking more than top three factors. This is so because the less important the factor is for respondent the harder it will be to state level of ranking. (Hague et al. 2004, 106-107)

Table 5. Example of Ranking Question

Rank the following factors related to how important you experience them for yourself?

<table>
<thead>
<tr>
<th>Cheapness of the service</th>
<th>Quality of the Service</th>
<th>Availability of the Service</th>
</tr>
</thead>
</table>

Forming questions proper way does not guarantee success. On the Table 7 is three steps listed by Hague et al. that should be followed in the process of designing a questionnaire in Table 7.

Table 6. Steps Of Designing Questionnaire (Hague & Hague 2004, 110)

<table>
<thead>
<tr>
<th>Step 1.</th>
<th>Formulate questions</th>
</tr>
</thead>
<tbody>
<tr>
<td>Step 2.</td>
<td>Arrange questionnaire layout</td>
</tr>
<tr>
<td>Step 3.</td>
<td>Test the draft</td>
</tr>
</tbody>
</table>
3: Institutional Markets

Institutional market is defined as follows: “it consists of schools, hospitals, nursing homes, prisons and other institutions that must provide good and services to people in their care.” In most countries government organizations are major buyers of goods and services what makes it an interesting market. (Kottler et al. 2009, 295)

There are some characteristics that are common among organizations in institutional markets. One of the characteristics is that they often operate in low budget. Other character is that often suppliers are required to go through bidding and the lowest bid will be chosen. This is still not always the case. Especially if purchase is part of project with major R&D costs and risks. Then there is possibility for larger budgets and purchase being excluded from biding. Also low competition might be reason to withhold from bidding. The amount of paperwork and bureaucracy is also often common. This is caused by review over public organizations. Still, or because of it, many suppliers operating in European institutional markets are complaining about organizations favoring suppliers from the same nationality. (Kottler et al. 2009, 295)
3.1 Public Healthcare Sector in Finland

The public healthcare sector in Finland can be separated to basic and specialist medical care. Basic healthcare includes services offered by municipal clinics and occupational health care. Specialist healthcare is literally healthcare that involves specialized doctors.

These services can be received from hospitals, policlinics or university hospitals. Responsibility of arraigning public health and social services lies on municipalities. (Kansanterveyslaki, 2010, 1 §)

The above mentioned characteristics of institutional markets apply also in Finland. Public healthcare is well documented and under public review. This also makes it somewhat easier to collect information while conducting a market research. The investments of public sector are well documented and can contain information for market researcher (Kottler et al. 2008, 295)
In the year 2011 the expenses of Finnish health care sector were measured to be 17,1 billion euros; that is 3165 euros per capita. This was about 9% from the overall GDP at the time. Bit over half of these expenses came from basic (3,7 billion euros) and specialist (6,0 billion euros)

(Institute for health and welfare- Official statistics of Finland, 2011)
4: eHealth

eHealth as a term is new as it has made the first appearance in scientific literature around 1999. The predecessors of the eHealth however date further. Medical informatics and bio-medical computing concepts became known already 1960’s. eHealth can be seen as an umbrella term. It describes the combined use of electronic communication and information technology in the health sector (Della 2001)

In this thesis we are concentrating on the subgenre of eHealth known as mHealth. mHealth was defined by Summit of the Foundation of The National Institutes of Health in following way: "the delivery of healthcare services via mobile communication devices". The development of information and communication technology offers variation of possibilities to develop healthcare sector. eHealth and mHealth affect ways of maintaining health, meeting diseases, contacting health care, receiving treatment and controlling costs as well as analyzing risk and preparing for them (Iakovids, 2004, 111)
5: Startup-companies

One thing that is often common between successful startup-companies is the ability to take advantage of technological changes. eHealth is an outcome of the change in the healthcare industry and it has provided a good phase for a startup companies. (Price, 2004, 72)

Characteristics of sustaining and disruptive innovation are defined on Table 7. Innovations of startup-companies are often disruptive. These characteristics already explain why startup-companies come up with disruptive innovations. Larger corporations have control of markets with sustaining innovation as market is predictable. There traditional R&D is enough to satisfy the needs of customer. (Cooper et al., 2013, 20)

There is one common trouble with market research when startup-company is developing a disruptive innovation. How the customer can provide information about needs towards a product or service when it's unknown for them? (Cooper et al., 2013, 20).

<table>
<thead>
<tr>
<th>Sustaining Innovation</th>
<th>Disruptive Innovation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Problem is well understood</td>
<td>Problem not well understood</td>
</tr>
<tr>
<td>Existing Market</td>
<td>New Market</td>
</tr>
<tr>
<td>Innovation improves performance, lower cost, incremental changes</td>
<td>Innovation is dramatic and game changing</td>
</tr>
<tr>
<td>Customer is believable</td>
<td>Customer does not know</td>
</tr>
<tr>
<td>Market is believable</td>
<td>Market is unpredictable</td>
</tr>
<tr>
<td>Traditional Business methods are sufficient</td>
<td>Traditional business methods fail</td>
</tr>
</tbody>
</table>

Table 7. Sustaining and Disruptive Innovation (Cooper et al 2013,20)
Market research can be used also for triggering the creative ideas. The main thing with triggering the creative ideas is helping to generate “insights” about customers, or a market that provides a “trigger” for innovative thinking. (Hammersveld 2008,7-8) For a startup-company market research might often be about finding the essential attributes from customers’ behavior. That also gives an opportunity to find the problems that are not often well understood inside organization. When they are understood also solutions can be developed. (Cooper et al, 2013,20).
6: Case study

6.1 Background of the case

Actual name of company involved is not revealed for protection of identity. Also the names of respondents and what federation of municipalities they represent is classified information. Idea of the case study is to give an example of survey design, time period used and what kind of respondent rate might be expected.

Market research of this case study was conducted to a startup-company referred as Company-X. Company-x has been working for a mobile application to help treatment of chronic diseases. They are aiming to get clients from public healthcare sector. Company-X felt a need for conducting a market research over Finnish public healthcare sector. Reason for this was that to build picture over the current situation. Including the decision making process on purchases, who are involved in process and what factors are considered most important when evaluating the product.

Product itself is an application meant for a follow-up communication with patients. Patient updates his data through mobile phone into the account what could be monitored by healthcare staff. This data would consist from everyday behavior affecting the control of chronic disease.

As company did not have resources do this research in house they contacted Turku University of Applied Sciences while looking for possible co-operation. That led to the market research to be done as student work part of professional work placement and also. This thesis is part of the outcomes of process.
The market research was conducted between the times periods of 01.06.2013-01.10.2013 the time used was divided as presented in table 8.

Table 8. Timetable of the Market Research

<table>
<thead>
<tr>
<th>Date</th>
<th>Task</th>
</tr>
</thead>
<tbody>
<tr>
<td>01.06-14.06</td>
<td>Background research</td>
</tr>
<tr>
<td>10.06-20.06</td>
<td>Listing possible respondents</td>
</tr>
<tr>
<td>10.06-24.06</td>
<td>Designing questionnaire</td>
</tr>
<tr>
<td>15.06-24.06</td>
<td>Testing questionnaire</td>
</tr>
<tr>
<td>24.06-01.09</td>
<td>Sending invitations</td>
</tr>
<tr>
<td>01.09-01.10</td>
<td>Analyzing the results</td>
</tr>
</tbody>
</table>

6.2 Research Goal

Company-x had no experience operating in public sector. The first aim of the research was to gain understanding about the current situation in the market. Focus was put on who are the decision-makers involved in purchasing and how the process is managed. Other important issues for them were how the geographical areas in Finland differ from each other; where is the most interest towards such application, which are already using something similar and who have already plans investing to such a technology at future. When this information would be revealed municipalities could be ranked related to how appealing customers they seem to be.

Market research process starts with defining problem. The problem for the company-X was that they did not understand the market they were about to enter. This problem is part of the category of “understanding the world” marketing intelligence. (Hammersveld et al., 2007,7) Decisions making related issues were on top. Firstly in what part of public healthcare such chronic diseases are treated. Secondly who there would be part of the decision making process. In other words who to contact when selling product. Understanding the needs of organization was other issue that was also part of “Understanding the world.” This included for example technological issues. What kind of systems
are already in use and how would those be integrated with company’s product.

“Predicting the future”-marketing intelligence was also part of the research. Company-x wanted to receive hindsight from the near future of eHealth decisions. That included if companies would have plans to invest in such technology or would be at least interested to study the possibility. (Hammersveld et al., 2007,7)
6.3 Background Research

Goal of the background research was to find the right decision makers from public healthcare sector. They would be approached with the invitation to take part into market research survey. As said in theoretical part, the public healthcare sector in Finland it is divided to special and basic medical care. During the background research it came to known that rather common chronic diseases are part of basic medical care.

As also stated earlier on the theoretical part the institutional markets are well documented and under public review. Almost all information related to the decision makers of public healthcare is public. Municipalities are providing basic healthcare services. The information was mainly collected from national online databases. There could be found the federations of municipalities who were organizing the basic healthcare services together.

Between these federations of municipalities there are still lots of differences. Sizes of federations participating to the survey differed from 4000 to 200 000. Organizational structure also differed related to the size. Larger sized federations had more people involved on decision making process. Also the job descriptions and organizational structures were more specified. Because of this it was not possible to make decision that people carrying a certain title would get the invitation. As some federations had positions others did not exist in other federations. That is why decision for possible respondents was made independently with each federation.
6.4 About the questionnaire used

In the design process of the questionnaire the theory of questionnaire design was combined with the elements of institutional markets. The original questionnaire form can be found from the appendices. In this part the questions are analyzed separately. So can be explained why questions where chosen.

The questionnaire starts with three classification questions:

- “Which one of the municipal federations do you represent?”
- “What is your position/title?”
- “Are decisions related to purchase of applications used in the treatment done inside your municipal federation?”

There could have been more classification questions used like “What is the size of the municipal federation that you represent?” This was found irrelevant because findings done during background research could be used for classification. Most of the questions that could have been asked for classification were already answered during that stage. First question made it possible to connect answers to right areas. Second made it possible to compare what positions were most common for decision makers. After these two questions there could already be done comparison if size of the federation had an effect on the positions of decision makers.

The third question was selected to the survey after the background research. There was some evidence that federation did co-operation with purchases. This question was supposed to bring data if it was common. Including the first question there could be already seen if co-operation was more common in certain size of federations or geographical areas.
Next question in the questionnaire is ranking question. Ranking questions are used to gain understanding among the importance of factors to the respondent.

- “What are the most important criteria when decided to do investment on applications used in medical care? Drag and drop so that the most important factor is highest and least important lowest”
  - “The experience from the co-operation done before”
  - “Price”
  - “How much working hours can be saved”
  - “Versatility in use”

Usage of ranking question was found the best option for these questions. Reason was that it could be predicted that respondents would have several important factors on their mind. With ranking questions there could be created difference between the most important ones. According to Hague et al. (2004, 106-107) there should not be asked more than top three factors in ranking question. That might have made this more effective.

After the given options there was an open box where the respondents were able to give another factor. This was done in case respondent would not feel related to any given options.

Next question is: “Who are participating to the decision making process about new application investments?”

Decision maker related question was stated by open question. Open question was used because background research had shown vast differences between organizations. There were not similar patterns between the positions inside organization that would have covered all federations. That is why it was found too unconventional to create ready options.

The next part of questionnaire consists of three different polar questions.
• “Do you experience that self-care application will be part of your future solutions?” Possible answers being:
  o “Yes”,
  o “No”
  o “I do not know”.

• “Are you already using this kind of solutions?”
  o “Yes”
  o “No”.

When answer is yes there is also open box. There respondent can name the self-care application solutions that they are using at the moment.

• “Have you made plans to start using this kind of solutions?”
  o “Yes”
  o “No”

Followed by open box where respondent can name the possible self-care application they would be planning to start using.

• “What of the following would be natural way for you to start using self-care application?” The ready given possibilities are:
  o “Following solutions of other federations of municipalities.”,
  o “Being an active seeker towards new companies and being in contact with them about the new solutions.”,
  o “We are able to do R&D work with applications in-house.”,
  o “Taking part to the development project what gives birth to new solutions.”
  o “Companies are actively in contact with us and we estimate the possibilities as we heard about them.”
Next question is

- "How is the purchasing process of applications arranged inside your municipal federation? (Are you doing this in co-operation with some other operator on the field?)

Last question on the questionnaire is about some of the companies operating on the field.

- “Do you know the following operators related to self-care applications?”

There is possibility to choose from the three companies that were selected by the data collected on background research. This list is confidential and that for not mentioned here. Respondent could also select that he/she does not know any of the mentioned companies.

After filling the questionnaire the respondent is given a possibility to get summary of the results gained in research. This possibility was mentioned already on the invitation to the survey. This was expected to have a positive impact towards the amount of responses.
6.5 Findings on case study

On this part is analyzed the respondent behavior during the survey. This is done through the data that the respondents left behind. Goal is to present how that correlates with given theories.

These findings provide insight about the right timing, people and questionnaire design. This insight can be used by company conducting similar market research than company-X. The findings have been analyzed and changed into improvement ideas in later sector.

Improvement ideas include how the research could have gained more responses. Also if questions be formed differently to avoid misunderstandings is issued.
6.5.1 Respondents

Tables 9 and 10 present data about the respondents. Table 9 lists what were the most common positions of respondents in municipal federations. Table 10 shows how the size of the federation affects the ranking.

In table 9 can be seen that medical superintendent was the most common position of respondent. Table 10 indicates however that medical superintendents were representing federations with population between 0-50 000. Explanation for this is most likely that in larger organizations job descriptions are more specific. In smaller federations medical superintendents are taking more part in purchasing decisions.

Table 9. Respondent’s titles

<table>
<thead>
<tr>
<th>Respondent’s titles</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Medical superintendent</td>
<td>9</td>
</tr>
<tr>
<td>Controller</td>
<td>1</td>
</tr>
<tr>
<td>Administrative manager</td>
<td>3</td>
</tr>
<tr>
<td>Chief information officer</td>
<td>4</td>
</tr>
<tr>
<td>Chief Financial officer</td>
<td>1</td>
</tr>
<tr>
<td>Chief officer of health services</td>
<td>1</td>
</tr>
</tbody>
</table>

Table 10. Respondents Related to the Size of Federation

Most common respondents related to the size of municipal federations.

<table>
<thead>
<tr>
<th>Size of federation</th>
<th>0-10 000</th>
<th>10-50 000</th>
<th>50-100 000</th>
<th>100-150 000</th>
<th>150-200 000</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>2. Chief information officer</td>
<td>2. Chief information officer</td>
<td>2. Chief information officer</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>3. Administrative manager</td>
<td>3. Administrative manager</td>
<td>3. Administrative manager</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
6.5.2 Behavior

On the tables 11-14 and figure 4 we have data about the respondent behavior. One of the most used indicators in surveys is respondent rate. Baruch & Holtom (2008) have conducted a research related to the response rate. In their research the average response rate for studies that utilized data collected from individuals was 52.7 and standard deviation of 20.4. Average rate when survey was done on organizations was 35.7 percent and standard deviation 18.8. Their research covered over 100 000 organizations and 400 000 individual respondents.

On table 11 can be seen the deviation of the invitations sent on each month of the research. Even though the invitations were not sent evenly between months respondent rate does not greatly vary. Response rate is bit lower than the average on rate on the study. This could be explained that there was not certainty with all the federations of municipalities who was the right person to contact. Because of this there was some invitations sent to people who were not the right decision makers.

Table 11. Responses Received

<table>
<thead>
<tr>
<th>Month</th>
<th>Sent Invitations</th>
<th>Responses</th>
<th>Percent of received responses</th>
</tr>
</thead>
<tbody>
<tr>
<td>(1)June</td>
<td>17</td>
<td>5</td>
<td>29.4%</td>
</tr>
<tr>
<td>(2)July</td>
<td>50</td>
<td>13</td>
<td>26%</td>
</tr>
<tr>
<td>(3)August</td>
<td>7 (second round)</td>
<td>2</td>
<td>28.5%</td>
</tr>
</tbody>
</table>
Table 12. Responses Related to the Time Passed from Sending Invitation

<table>
<thead>
<tr>
<th>Weekday</th>
<th>People responding first day since sending the invitation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Monday</td>
<td>28</td>
</tr>
<tr>
<td>Tuesday</td>
<td>33</td>
</tr>
<tr>
<td>Wednesday</td>
<td>10</td>
</tr>
<tr>
<td>Thursday</td>
<td>8</td>
</tr>
<tr>
<td>Friday</td>
<td>5</td>
</tr>
<tr>
<td>Saturday</td>
<td>5</td>
</tr>
<tr>
<td>Sunday</td>
<td>5</td>
</tr>
</tbody>
</table>

Table 13. Weekdays Invitations Were Sent on

Invitations were send as follows:

<table>
<thead>
<tr>
<th>Weekday</th>
<th>Numbers of invitations send</th>
<th>Responses gained</th>
</tr>
</thead>
<tbody>
<tr>
<td>Monday</td>
<td>28</td>
<td>5</td>
</tr>
<tr>
<td>Tuesday</td>
<td>33</td>
<td>5</td>
</tr>
<tr>
<td>Wednesday</td>
<td>10</td>
<td>7</td>
</tr>
<tr>
<td>Thursday</td>
<td>8</td>
<td>1</td>
</tr>
<tr>
<td>Friday</td>
<td>5</td>
<td></td>
</tr>
<tr>
<td>Saturday</td>
<td>5</td>
<td></td>
</tr>
<tr>
<td>Sunday</td>
<td>5</td>
<td></td>
</tr>
</tbody>
</table>
Table 14. Response Rate

<table>
<thead>
<tr>
<th>Question</th>
<th>Response Rate</th>
</tr>
</thead>
<tbody>
<tr>
<td>question 1</td>
<td>20/20</td>
</tr>
<tr>
<td>question 2</td>
<td>20/20</td>
</tr>
<tr>
<td>question 3</td>
<td>20/20</td>
</tr>
<tr>
<td>question 4</td>
<td>20/20</td>
</tr>
<tr>
<td>question 5</td>
<td>15/20</td>
</tr>
<tr>
<td>question 6</td>
<td>16/20</td>
</tr>
<tr>
<td>question 7</td>
<td>16/20</td>
</tr>
<tr>
<td>question 8</td>
<td>15/20</td>
</tr>
<tr>
<td>question 9</td>
<td>15/20</td>
</tr>
<tr>
<td>question 10</td>
<td>16/20</td>
</tr>
<tr>
<td>question 11</td>
<td>0/20</td>
</tr>
<tr>
<td>question 12</td>
<td>15/20</td>
</tr>
<tr>
<td>question 13</td>
<td>15/20</td>
</tr>
</tbody>
</table>

Abstract of the research results

- Respondents wanting to receive abstract of research results
- Respondents NOT wanting to receive abstract of research results

Figure 3. Abstract of the Research Result
6.5.3 Improvement ideas

We can divide the process into the phase of getting the respondents interested to participate, the questionnaire design and layout, and finally the received responses themselves.

To start with analyze the first phase of the process; sending the invitations and gaining the interest of possible respondents. It is known how many invitations were sent and how many responses received. One of the problems in the case of Company-x was the season of sending the invitations. This happened to be in the holiday season in Finland. This even more because, the target is public sector, where the holidays are kept always at same time. In this case the timing could not have been changed but should be taken in consideration in future. The good thing is that usually there was information available when people return for holidays or who is replacing them.

On response rate of the questionnaire there is seen that after question three five people quit. That is a quarter of all the responses. One of the reasons could be on the survey layout. Three first questions are on the same page. After that respondents have to change the page by clicking the button saying next. Button is placed under the questions. Could be that they answered in hurry and did not understand that you should change the page to continue. This would be supported by the fact the amount of respondents quitting on same question. Some sort of technical problem might have also been reason. That however did not occur while the questionnaire was tested on different browsers. It is also possible that respondents who quit felt that these questions were not on their field.

We can see from the responses is that question 11 has no responses. The reason most likely is the wideness of the question. The purchasing process might have been too hard to describe. Respondents could have felt that with open box question they are expected to give long and precise answers that take
time.

To get better results the question could be changed into for example following: “Name the operators and their tasks on the purchase process of an application.” This would have made it more clear to the respondent what is wanted. Also placing open question to the end of questionnaire might also be the reason for getting no answer. The interest of respondents might have been worn out.
7: Conclusion

There is never certainty of success when conducting a market research.

When talking about startup-companies the uncertainty is often increased. This is so because of couple factors. First one being lack of resources. Other is the fact that startup-companies often operate with disruptive innovations.

Still market research is something that Startup-companies should consider. To understand the customer is the key to success. To create new innovations has to first know the problems that should be resolved.

Conclusions on research questions:

**What are the different techniques of market research?**

Techniques of observation, focus groups, surveys, behavioral data and experiments. (Kottler et al. 2009,193) These create marketing intelligence that can be categorized to evaluating the past, predicting the future, painting a top-level picture, exploring in-depth motivations, describing the world, building theories how the world “works”, monitoring relative change or triggering creative ideas. (Hammersveld et al., 2007,5-8)
“How startup-company can use these techniques?”

Startup-companies often work on disruptive innovations. This allows them to use market research on triggering creative ideas. For this they need to first gain understanding of the processes taking place in organization. Then it is possible for a company to state a solution for problems occurring inside the organization that are not well understood.

After market research is done assumptions of company can be tested. This is important for a startup-company. There are not many people involved so the false assumptions have more effect.

“How these techniques can be used while doing research on institutional markets?”

Institutional markets are under public review. This gives market researcher opportunities to collect secondary data.

After analyzing respondent’s behavior on case of company-x gave information on respondent rates. It seems that Finnish public sector has similar respondent rate on surveys compared to other organizations. (Baruch & Holtom, 2008)
8: Source material


Della Mea V. 2001 What is e-Health (2): The death of telemedicine?

Consulted 10.12.2013

Consulted 9.12.2013
http://www.thl.fi/fi_FI/web/fi/tilastot/aiheittain/talous/terveysmenot

Yehuda Baruch and Brooks C. Holtom. 2008 Survey response rate levels and trends in organizational research.
Consulted 28.1.2014
http://www18.georgetown.edu/data/people/bch6/publication-39527.pdf
Appendix 1. Questionaire

Original questionnaire used in the market research conducted for Company-x.

Mikä kuntayhtymää edustatte?

Virkanimikseenne

*Tehdäänkö päätökset terveydenhoidossa käytettävien sovellusten hankinnasta kuntayhtymänne sisällä?

☐ Kyllä
☐ Ei
☐ Osittain

Mikä ovat tärkeimmät kriteerit tehtäessä investointipäätöstä terveydenhoidossa käytettävien sovellusten osalta?
(aseta tärkeysjärjestykseen ylhäältä alaspäin)

- Aiempia yhteistyö yrityksen kanssa
- Hintaa
- Kuinka paljon työnteeja pystytään säästämään
- Monimuollisuus
- Tekníinen yhteensopivuus

<table>
<thead>
<tr>
<th>Aiempia yhteistyö yrityksen kanssa</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hintaa</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Kuinka paljon työnteeja pystytään säästämään</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Monimuollisuus</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Tekníinen yhteensopivuus</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Muu; mikä?

Ketä osallistuvat kuntayhtymänne tehtävien ohjelmistohankintojen päätöksenteekoon?
(hallintoelimet tai henkilöiden virkanimikkeet)

Ovako terveydenhuollon ohjelmistohankinta päätökset osa suurempaa hankintasuunnitelmää kuntayhtymänne?

☐ Kyllä
☐ Ei
☐ En tiedä
*Koetteko että omahoidolliset ohjelmistoratkaisut tulevat olemaan osa terveydenhuoltoratkaisujenne tulevaisuutta?
  - Kyllä
  - Ei
  - En tiedä

Onko teillä jo käytössä tällaisia ratkaisuja?
  - Kyllä
  - Ei
  - Mitä?

Onko teillä suunnitelmassa ottaa käyttöön tällaisia ratkaisuja?
  - Kyllä
  - Ei
  - Mitä?

Mitkä seuraavista kokisitte luonnollisina tapoina ottaa uusi omahoitoosovellus käyttöön?
  - Seurannalla muilla SOTE-alueilla käytöön otettuja ratkaisuja.
  - Etsimällä aktiivisesti tietoa uusista yrityksistä ja mahdollisuksista ja olemalla yhteydessä nein arviolamme sisällä.
  - Osallistumalla omahoidon kehityshankkeeseen jonka kautta haetaan uusia ratkaisuja
  - Yritykset ovat aktiivisesti yhteydessä meihin ja arvioimme ne itä mukaa.
  - Muu; mikä?

Miten sovellushankinnanne on järjestetty?
(Onko esimerkiksi ulkoistettu tai järjestetty yhteistyössä toisen toimijan kanssa)

Oletteko tietoisia seuraavista omahoidon toimijoista?
  - Talonki
  - ProWellness
  - Care4Me
  - En osaa sanoa
  - Muu; mikä?
Haluan saada tävistelmän tutkimuksen tuloksista

☐ Kyllä
☐ Ei

Sähköpostiosoitteeni:

Kiitos ajastanne!