

M2M

A qualitative study of users' feedback related to
future M2M services

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1 Introduction

The background of this study is a research project which aims to gain user feedback on future IT-services. In this project, a number of user scenarios were developed and these showed how IT-services could be implemented in different contexts. The basis for this study is selecting a few scenarios and presenting them for users in focus-group interviews. The users were recruited from Testbed Botnia's user community.

For a couple of years, Centre of Distance Spanning Technology (CDT) have been working with different forms of users participation in R&D-projects in an environment called Living Lab¹, Testbed Botnia, supporting co-operation between researchers, end-users, industry and SMEs. The Testbed Botnia Living Lab was established in 2002. During the years several investigations and tests has been done in cooperation with different actors. An important part in the development of Living Labs is the creation of new methods that support end-user participation, and that these methods are useful for product and service developers. Another ongoing work in the attempt to develop Living Labs is to connect regional test environments to other similar environments around Europe with the aim create a network of Living Labs (Mirijamdotter, Ståhlbröst, Sällström, et. al., 2007). This is brought about through the Corelabs project, an on-going project financed by EU and coordinated by CDT (www.corelabs.eu; www.openlivinglabs.eu).

1.1 Purpose

The purpose of this user participation study is to elicit and analyse users' feedback, that is, reactions, needs and ideas related to future IT-services. Furthermore, the work aims to contribute to the development of new methods for user participation while developing new ICT-solutions.

1.2 Goal

The goals of the study are:

1. Carry out and document 3 focus-group interviews
2. Analyse the result and compile it in a report

¹ Living Labs is a concept to conduct systemic innovation with global reach. In several regions of Europe, local "Living Labs"-like application test and market validation environments exist independently of each other, for example Arabianranta in Helsinki, Mobile City Bremen in Germany and Testbed Botnia in Sweden (Ståhlbröst 2004). In these testbeds, technology evaluation and market validation infrastructure is provided in an open manner to actors within the targeted sectors. The concept directly involves end users into development of new applications and services by providing bilateral access, on the one hand, the consumer to the new and emerging services, and on the other, the developing enterprises to the consumer feedback (Ståhlbröst 2006). This integrates the consumer into the development process, ensuring highly reliable market evaluation, resulting in a significant reduction of technology and business risks. In combination with scientific evaluation methods developed by regional academia, the approach is particularly attractive to SMEs, micro-organizations, and start-ups that typically have problems acquiring venture capital unless the market attractiveness of ideas, concepts, products and services can be reasonably demonstrated.

3. Carry out an evaluation of the methodological approach

In the following we begin by outlining our methodological approach followed by description of the focus group interviews. The results are then presented and structured according to our analysis model. Reflection and conclusions complete the report.

2 Methodological Approach

In the following we present our use of focus groups for qualitative data gathering. This is followed by the analytical tool for this study, the models of relating to needs and to motivators.

2.1 Focus groups

Focus groups are a method that involves people as a group, and therefore can be described as an interview with a group of people, focusing on pre-chosen issues or themes. The method has mainly been used within the marketing area but lately it has also been used in academic research. The greatest advantage of the method is that it provides insight in people's ideas, attitudes and values. Depending on the subject for the focus group, people are chosen based on criteria in line with the theme or subject to be discussed. In order to initiate the subject some kind of stimuli material is provided to the participants. When the focus group takes place the researcher acts as moderator, initiates the discussion and introduces new aspects on the subject when needed. The idea is that the participants should speak as freely as possible, whereas the moderator rarely intervenes. There are of course some things that might affect empirical material that is gathered this way and which demands awareness and attention (Wibeck 2000). For example, people might adjust their opinions, suggestions and so forth, when working in groups, or one person might dominate the discussion, and thereby silence others. The moderator should be attentive to this, and try to involve all attending persons.

Morgan (1996 p.130) defines focus groups "as a research technique that collects data through group interaction on a topic determined by the researcher". This indicates three important things. First, it is a method aiming at data collection for a research purpose. Hence other kinds of groups such as working groups, management groups etc. are excluded. Secondly, the data is collected through group interaction, since interactive discussions are focused. Finally, the researcher decides the topic, and a certain outcome is expected. The researcher has an implicit question or idea, which s/he wants to explore. The aim is more than a mere meeting. Focus groups also provide the researcher the possibility to study how people express themselves including people's interaction, beside the focus on the content of what they say (Wibeck 2000).

The method has several advantages. The meeting can make participants aware of things they have not reflected on before, and at the same time they can gain insight – it is possible to create visions and plans. All discussions of which we as human beings take part, provides opportunity and possibility to re-consider our own view. A change process might occur, or our view is even stronger confirmed. Hence, any group discussion involves a certain level of learning for all involved, not least the moderator, since new insights, understandings and knowledge can be gained. The understandings acquired during focus groups need not necessarily be "true, justified facts" – instead it is persons' views of the subject in focus. Also, participants' become aware of other views on the situation, which many times come from other perspectives (Runardotter 2007).

2.2 Needfinding

A basis for making this study intelligent is the approach of “need-finding”. Today, it has become increasingly common to study users and their needs since products or services that actually fulfil a user need are more likely to be used. Earlier, many products and services were developed to support a certain user group within a certain organisation. Following that, the users did not have a choice whether to use the product. Today, many new products are aimed towards a broad market where users, by their own free will, can choose to use, or not use, a product, particularly in private life (Ståhlbröst 2006; Ståhlbröst and Holst 2006). Hence, it has become increasingly important that the products and services answer to the needs and wishes users.

However, to find and identify user needs is a complex process. It can be difficult to see what needs users have, thus, an organised research approach is needed (Patnaik and Becker 1999). Further, in needfinding, it is more important to look for needs rather than a specific solution. Following that, more doors are kept open and the risk of focusing on premature solutions can be avoided.

When performing a needfinding study it is important to keep in mind that the users are not the ones who should present and express their own needs since they might have needs they are not aware of. Instead, the aim is to stimulate the users to tell as rich stories as possible about their situation and then in these stories elicit their needs (Ståhlbröst and Holst 2006; Holst and Ståhlbröst 2005). However, needs are not the only thing that can be found in rich stories, users might also have ideas of solutions, functions, motives and values that are important to understand in order to stimulate and support a future usage of the intended product or service. Therefore, in this study, the analysis of the focus-group interviews has been supported by Reiss (2004) sixteen motivators presented below. Motivation is one reason why people on a voluntary basis are willing to do things; thereby to motivate users to use the final product or service motivators are important to understand.

2.3 Motivators

Reiss (2004) sixteen motivators, or basic desires, are used as an analytical framework for structuring the focus group data. The framework is developed based on numerous of studies conducted since 1995. The motivators provide indications on different actors' values and, hence, can reveal people's motives and desires. The motivators can be regarded as factors influencing people's cognitions, feelings, actions and perceptions. Consequently, people may have reasons for acting in a certain way without being explicitly aware of these reasons. Therefore we find that motivators can be related to needs particularly in situations where people have needs they are not aware of or cannot express.

Motivators can also be separated into goals and means, but the goal can also be a desire for its own sake based on the individual's purpose for why s/he acts in a certain way. For example, a professional football player can play football as a means to get salary and a student can study as a means to improve a grade. In each of these cases, the goal (salary and grade) is desired because it produces something else. Additionally, a person might want a salary as a means to enhance his/her social status (Reiss 2004). See Table 1 for a description of Reiss' motivators.

Motivator	Motive	Intrinsic Feeling
Power	Desire to influence (including leadership; related to mastery)	Efficacy
Curiosity	Desire for knowledge	Wonder
Independence	Desire to be autonomous	Freedom
Status	Desire for social standing (including desire for attention)	Self-importance
Social contact	Desire for peer companionship (desire to play)	Fun
Vengeance	Desire to get even (including desire to compete, to win)	Vindication
Honor	Desire to obey a traditional moral code	Loyalty
Idealism	Desire to improve society (including altruism, justice)	Compassion
Physical exercise	Desire to exercise muscles	Vitality
Romance	Desire for sex (including courting)	Lust
Family	Desire to raise own children	Love
Order	Desire to organize (including desire for ritual)	Stability
Eating	Desire to eat	Satiation (avoidance
Acceptance	Desire for approval	Self-confidence
Tranquility	Desire to avoid anxiety, fear	Safe, relaxed
Saving	Desire to collect, value of frugality	Ownership

Table 1: Motivators (after Reiss 2004)

Salovaara (2004), claims that a need is the goal that a user wants to achieve by using a product; hence needs can be related to motivators and basic desires. Reiss argues that people's actions are affected by their endeavour to satisfy their experience of the sixteen basic desires as illustrated in the second column of Table 1. When each basic desire is fulfilled an intrinsic feeling of happiness emerge, and that feeling is different for each desire, see third column of Table 1. In addition, people prioritise the desires differently and situated; what is important for one person in a specific situation, might be unimportant for another. Conversely, the desires of the same individual might be prioritized differently in a different situation.

In this study, we have used motivators as a tool for the analysis of the data gathered in the focus-group interviews. In presenting the analysis, after introducing the selection of participants and the process for the focus group interviews, each relevant motivator will be introduced including the respective intrinsic feeling. Each motivator appears differently in relation to the situation; hence, our interpretation of the motivation related to the specific situation will be presented. Each motivator has a name of the motive, a motive, and an intrinsic feeling.

3 The focus groups

The focus groups conducted within this project were recruited through Testbed Botnia², described in the above, a national testbed that mainly focuses on mobile services, and in that context provides investigations that involve end-users. (Testbed Botnia is also described in the Introduction of this report.) The founding idea for Testbed Botnia is that end-users, so called test pilots, register on a website and might then be selected for different investigations. In this case they were asked to answer a short form on the web, filling in their sex, age, size of town in which they live, where they can participate in a focus group interview, how technically interested they are, how often they use technical things and whether they are fast or slow in adopting new technical things.

One of the criteria for the selection of participants was, first and foremost, that they could participate in focus group interviews in Luleå, since Luleå was the sole alternative that had enough answers. (The other alternatives were Sundsvall, Göteborg, and Stockholm.) Second criterion was age and sex; the respondents were categorized according to age and divided into three groups: one consisting of women, one of men, and one was a mixed group. As the final criterion, the people that showed least interest in technological matters were chosen. The selection resulted in 30 people, which were contacted via their mobile phones.

The focus groups conducted within the project, thus consisted of three groups. The first interview involved a group of nine young women, age 20-25; the second interview consisted of two women and four men, age 26-35; and the third interview was held with five men between 25-30 years. Hence, in total 20 people participated, 11 women and 9 men.

3.1 The process of the focus groups

The focus groups were carried out involving three, two, and two moderators respectively for each group. All three focus groups were initiated by us (the moderators) informing the participants how the focus group was to be conducted, its objective, and our role as moderators. We asked if it was ok to record the discussion, and everyone agreed to that. We also informed them that their discussion would be treated anonymously and that they were absolutely free to come up with anything that came to their minds.

The participants were then asked to present themselves, by telling what was their main occupation, nine of the participants were students, and the remaining eleven were working (see Table 2).

² Information about Testbed Botnia is found at <http://testplats.com/doc/aboutbotnia/se>

Women – working	Men – working
2 system developer 1 physiotherapist 1 company owner (beauty salon) 1 cook	1 consultant (quality assurance) 3 IT-administration, maintenance 1 project leader 1 investigator
Women – studying	Men – studying
1 teacher 1 legal science 1 nurse 1 business economics 1 master of engineering 1 ergonomic design	1 master of engineering 1 business economics 1 PhD student

Table 2. Focus groups participants and their main occupations.

We also asked about their leisure time and interests. The participants' main interests were sports, pets, music, IT and computers, TV, hunting, fishing, painting, renovation of house and cars, and family.

The actual aim of the interviews then began by presenting the first scenario; hence, scenarios were used as our stimuli material. After that, the focus group discussion went on, and whenever the discussion became weaker, we inserted a question, asking them to develop their statements, or went on with a new scenario. Each focus group lasted for round two hours. The scenarios and short statements that we used as mental stimuli are included in appendix 1.

4 Results

In this section, the results from the focus-group interviews are presented. The results are divided into three clusters based on the scenarios that were used as stimuli material, namely; home, travelling and shopping. In each of these clusters, the appearances of the most relevant motivators are described in relation to the situational circumstances.

4.1 At home

The first scenario discussed with the participants was the future home. In this discussion it became apparent that the participants wanted to have a safe, comfortable, and organised home. In the following, a more comprehensive description of the results related to this scenario is given.

Tranquility – The motive behind this motivator is the desire to avoid anxiety and fear and the intrinsic feeling is safe and relaxed.

During the interviews, the participants have stated that they wanted their home to be a peaceful place where they could feel safe and relaxed. In this study, this means that the participants wanted to have control over their home. All the groups stated that they wanted to be informed if, for example, the stove was not switched off when they left their home, if they have forgotten to put out a candle, if they have forgotten to lock the door, or forgotten to set the alarm. The participants also talked about solutions such as having equipment that automatically switches off when they are not used. Other things

they wanted to be informed about were if they needed to fill their heating system with oil or pellets, if something in the house has started to rotten, such as the panel work, or if something was about to get broken, such as the refrigerator. When everything runs smoothly, they do not want any information. *“Information is good when it is chosen! That’s the way I see it”* is one expression from the participants.

Another thing they talked about, in relation to tranquillity, was a monitoring system that disconnected all their electronic apparatus in case of a thunderstorm. They did not usually think of these matters when they left their homes.

Tranquility in the context of the home was also connected to safety in terms of having alarms for burglary, fire, or if something is wrong with the car. When it comes to the fire alarm, the participants stated that they want to get information if a fire starts in their homes even when they are not at home. *“It would feel good to know”*. When the participants talked about burglary alarm different opinions appear, some of them wanted the information to go to the police only, others wanted to get the information directly to their mobile phones. When it comes to stealing from their cars, they wanted an SMS to their mobile phone, hence this might enable them to stop the burglary. Solutions they mentioned were cameras to record who were inside their home and what they were doing. This solution has, however, been discussed frequently because they did not want to control their family or be controlled themselves. *“It is kind of scary with too much control.”*

The participants have also talked about tranquillity in relation their own safety. They wanted to be able to get in contact with their family in case of emergency. One solution that came up among the women in the interviews was a button on the mobile phone that goes directly to a chosen number if they were attacked.

Order – The motive behind this motivator is the desire to *organise* (including the desire for *ritual*) and the intrinsic feeling is *stability*.

The participants also said that they want a stable and well-arranged environment; hence, the motivator order becomes vital. In relation to this motivator, the participants have talked about things such as knowing what they have in their refrigerator/freezer, to know the expiration date, and to be able to get an automatically generated shopping list depending on what they have run out of. They also wanted the refrigerator to warn them in advance if they are running out of something. They want to be able to get this information independent of their location. If they are on their way home after work, they wanted an SMS telling them what they need to shop. In addition, if they are at the store they wanted to be able to ask their homes (refrigerators) what they needed to buy if they want to eat a specific meal.

Order can also be related to the organisation of their homes, for instance, in relation to the statement that they did not want any cables connected to all their electronic gadgets. *“It would be nicer without them.”*

In relation to the Order motivator, they have also talked about having control over their keys, mobile phone, wallet, glasses, but also things that others have borrowed. In these cases they wanted some kind of transmitter on their things so that they can be located. *“... this does not feel as important in the home, it is usually the things you have outside the home that disappears, such as the car or the car-stereo, or the boat... these things can disappear fast and you never find them again.”*

Independence – The motive behind this motivator is the desire to be *autonomous* and the intrinsic feeling is *freedom*.

This motivator has strong connections to the participants feeling of freedom; the participants stated that they want to be in charge of their lives. They wanted to have the freedom to choose what kind of information they want, when they want it and where they want it. They also stated that they do not like control and supervision of their own, and other people's actions. The situations in which they can accept supervision were outside their home, e.g., a camera in multi-storey car parks, or cameras in stores to prevent crimes. They also discussed supervision of elderly family members, both for their family's safety and for their own control. In these cases, they wanted to know that everything is normal. The participants expressed an anxiety for supervisions in general; they believed that it would create stress and unnecessary conflict in families.

The participants expressed that they do not feel that they have any freedom due to the use of their mobile phones. They experienced that they are expected to answer if somebody calls them, otherwise they are assumed "dead". They also said that when they send an SMS they controlled how long it took to get response from the receiver. Hence, they believed that they were expected to always be available and that created stress. The participants also said that they had stopped making appointments; hence, they have a feeling that they always must be reachable. One of the participants claimed that she hated her mobile phone because it was never 'mediating' anything fun, only and mostly work. In addition, the participants expressed that they were worried that all new technology would create more problems than it actually would solve.

In relation to the Independence motivator, the participants also said that they did not want to keep small things in memory. They wanted their home to have some kind of intelligence, for example, refrigerators displaying its content. Related to that, the participants expressed that they wanted to have the possibility to move around as it pleased them in the home; hence they wanted wireless communication between the computer, the stereo and the TV. They also expressed a desire to have wireless electricity.

When it comes to housework, the visions and solutions the participants talked about were such things that would facilitate their everyday lives. In this case, this involved that they wanted to be released from their routine duties. In regard to the Independence motivator, the solutions the participants talked about had to do with self-organising laundry, self-sorting refuses, self-dishing dishes, and self-cleaning homes. The solutions they talked about related to e.g., a cupboard that washes the dishes, one hole for the refuse which also take care of the environmental sorting of disposal. At the same time they expressed a worry that if all the obligations they have today are eliminated, what will feel boring then?

***Saving* – The motive behind this motivator is the desire to *collect* and the value of *frugality*. In this motivator, the intrinsic feeling is *ownership*.**

In the context of the home, saving is by the participants expressed as saving time, energy, and money. This means that the respondents talked about monitoring equipment for their pets so they can avoid that the cat or the dog destroy their furniture when nobody is at home. The participants also talked about saving energy, they wanted technical solutions that could help them to keep track on their energy consumption. By this means that they believed that people would be more motivated to switch off the light, or the computer, if they knew the actual energy costs, not merely estimations.

Vengeance – The motive behind this motivator is the desire to get even (including the desire to compete and win) and the intrinsic feeling is vindication.

This motivator is strongly connected to the motivator “Tranquility” and burglary. This means that the participants, in case of burglary, wanted their things to stop functioning. They wanted some kind of control so that their belongings could only function in their home, or where they choose to use it. Other ideas were that the home could become a fort where the burglaries are locked in. This solution could also be related to the motive *idealism* where the motive is to improve society; if their belongings did not function outside a predefined area, the crimes might decrease as well.

Physical exercise – The motive behind this motivator is the desire to exercise muscles and the intrinsic feeling is vitality.

This motivator is expressed as an anxiety to become too lazy. The participants have expressed their anxiety to become too lazy if all the solutions that could help them to plan, find, think and so forth, were available. “*What would we do then?*”

4.2 Travelling

The second scenario that was presented to the participants in the focus group interviews was related to travelling.

Curiosity – the motive behind this motivator is the desire for knowledge and the intrinsic feeling is wonder.

We have found that the motivator Curiosity was the most outstanding motivator while travelling. One of the reasons for travelling was stated as a desire to see and experience new things; hence, the participants wished to get information about the place before they went there. Examples of information they wanted were if and what kind of vaccination is needed; the expiration date for the passport; weather and pricing at the location. By this kind of information their planning and also their luggage could be adjusted to the circumstances.

While on site, they wanted to get information about sights, monuments, stores with different pricing and sightseeing tours designed according to their personal profile. They also wanted a personal travelling guide related to a personal profile. This travelling guide should contain tips, opinions and suggestions related to the specific location and gathered by other travellers with similar profiles. For example, good restaurants and hotels within the same price range as the personal profile. They also wanted to get information about vacant hotel rooms.

The participants clearly stated that they wanted to ask for the information; at the same time they wanted surprises. One of the reasons for travelling is to experience things; hence, they did not want the journey to be too structured and planned.

The participants also said that when they visited a monument, museum etc. they wanted to have access to related and relevant information. This information should be personally adjusted, not a long-winded description, and this information should be available in their mobile phones. A suggestion was that the information could be in 3 D format.

”If you see a skeleton from a dinosaur... it would be fun to see how it really looks.”

To sum up, they wanted a travelling guide that had information which usually is not available in travelling guides.

Order – The motive behind this motivator is the desire to *organise (including the desire for ritual)* and the intrinsic feeling is *stability*.

Before and during the journey one important motivator is "order" – they wanted the journey to be well-organised and run smoothly, especially if they were travelling in their work.

One thing that has come up during the interviews was that they want to go "from door to door" in an easy manner. They want to be reminded to empty the refrigerator before they leave. They did not want to sit and wait for several hours between flights. They also wanted information about where their gate is so they did not have to run around and search. The participants also said that they wanted to have central databases having control of their insurances, passports, etc. All the documents gathered in one place. Travelling without a paper ticket is also wished for.

Another thing the participants have mentioned in the interviews is that they wanted that the luggage to be at the hotel when they arrive. Hence, they would not need to wait for the luggage.

When coming home from the journey, the participants came up with the idea that they could send a shopping list to a store when they embarked on their return journey. The store would then manage the shopping and deliver the groceries to their home so that when they arrived they have fresh food available at home.

Tranquility – The motive behind this motivator is the desire to *avoid anxiety and fear* and the intrinsic feeling is *safe and relaxed*.

One perspective of being on a journey is being in a new place. This means that they wanted to have information about the location before they arrive. Especially the women said that they wanted to get information about where it is safe (or not safe) to walk around. They also wanted to get information about what clubs they could go to, and what clubs not to visit. One thing that came up among the women was also that the need to feel secure during travel is more obvious when they travel alone. The men did not discuss this issue in their groups.

Another way that was suggested to avoid anxiety is to get to know the culture in the country they visit, what is normal in this country? Do the buses leave on time? Am I expected to bargain when I shop? In other words, questions related to culture, i.e. how things function in the country they visit would be of interest to be informed about.

Social contact – The motive behind this motivator is the desire for *peer companionship (a desire to play)* and the intrinsic feeling is *fun*.

Statements from the participants related to the motivator Social contact are that they wanted to communicate with the inhabitants in the country they visit; hence, they wanted a "Bablefish" i.e. an immediate translator. The participants also said that if they could communicate with the inhabitants they would get suggestions on where to go, and what to do while they visit the country. Social contact while travelling is also related to the possibilities to meet new people.

4.3 Shopping

The third scenario we presented and discussed with the participants was a shopping scenario. In this scenario, one question was “*what is a perfect shopping tour?*” The women answered that it is when all clothes they try on fit perfectly, while the men answered that “*the perfect shopping is no shopping*”.

Saving – The motive behind this motivator is the desire to *collect* and the *value of frugality*. The intrinsic feeling is *ownership*.

In this study the motivator Saving relates to saving time, energy and money. The participants wanted to shop as economically as possible and they wanted to household with their resources. Obviously, saving money in this context has to do with buying merchandises as cheap as possible.

The men said that the most strenuous with shopping clothes was to sift out what they did not want.

When it comes to saving time and energy, in relation to shopping, the participants said that they want to have all their bonus cards in one card, presumably, their bank card. They also wanted help with their shopping - mostly help with finding the right size. A solution they mentioned in relation to this is a scanner that measures their body and calculated the size. The women said that they wanted to feed in their measures and thereafter get suggestions on what clothes that fit them. Related to this, one solution they mentioned was an electronic shop assistant that, for instance, could see if the clothes fit, that could tell them if their size were available, or if the garment was available in other colours.

Another problem that came up with shopping was related to the process of trying out clothes. If it does not fit, you have to put on all your own clothes, go out into the store to find a different size, and perhaps queue for a dressing room to try the different size of the garment. The participants clearly stated that they did not want to queue.

Another service the women talked about was to have the opportunity to get bulky goods delivered to their home so they did not need to walk around the town carrying the goods.

When it comes to shopping groceries, the participants want to save energy and a trolley that automatically scanned all the groceries they put into the trolley was suggested. They also wanted to get special offers related to their profile. The men said that they “*wanted to write a list, go to the store and then receive a carrier bag with the groceries, pay and go home.*”

Acceptance – The motive behind this motivator is the desire for *approval*. The intrinsic feeling is *self-confidence*.

In our analysis of why people shop for clothes the motivator Acceptance became vital. This motivator’s focus on feeling self-confident relates to our interpretation that the aim to look as good as possible is one motivator behind shopping. One solution the participants have mentioned related to this is the “intelligent adviser” and this has already been discussed in reference to saving energy, but here the motivator is not to save time and energy, the focus is to look as good as possible. “*You come into a shop and describe yourself as a person and then you get suggestions.*”

Our interpretation above can also be connected to the motivator *Status - the motive behind this motivator is the desire for social standing including a desire for attention and the intrinsic feeling is self-importance*. This means that the Acceptance motivator in the shopping context might additionally be based on the Status motivator and also might include the Saving motivator. One expression related to this kind of integrated motivators was that the participants wanted a technical solution that could give them suggestions for shops where they can buy copies of branded products to a lower price, together with a map of how to get there.

Independence – The motive behind this motivator is the desire to be *autonomous* and the intrinsic feeling is *freedom*.

This motivator Independence in relation to shopping has to do with the unwillingness to plan the purchases. They wanted to be free and shop when they feel for it. One thing that came up related to this situation was the customer loyalty cards. Many of the participants have several cards - hence, some of them are left at home so when they shop they can not use their cards. One suggestion that came up is one card in which all the loyalty cards are gathered.

Related to the Independent motivator, the participants also wanted technical solutions that could guide them when they purchase groceries. In those situations they wanted to get suggestions on what to eat and what to buy (in relation to what they have at home). They also wanted to get suggestions in the store, if they e.g. long for avocado they wanted to get suggestions on how this could be prepared.

Order – The motive behind this motivator is the desire to *organise* (including desire for ritual) and the intrinsic feeling is *stability*.

Order was also asked for and in relation to this motivator the participants talked about getting suggestions for a weekly menu based on a personal profile. “*To cook is no problem, the problem is to plan what to eat and then go and buy it. I would prefer if someone could fix that and deliver it to my home*” is one expression from the participants.

Social contact – The motive behind this motivator is the desire for *peer companionship* (a desire to play) and the intrinsic feeling is *fun*.

The motivator Social contact is the most apparent when the shopping concerns gifts. They wanted to succeed with their choice of presents; it should be fun to give and the aim is to give presents that makes the receiver happy. The solution that has been discussed in this situation is personal profiles that can help and give suggestions on what to buy. Dynamic wishing lists have also been discussed. These lists should show what the receiver wants, but also if somebody else has bought that gift.

Social contact while shopping also involves with having coffee and sitting down for a chat during the shopping tour.

5 Reflections

In this section we have divided our reflections into three parts. First we provide our thoughts and ideas in relation to the results. We continue by reflecting on scenarios per se, and finally we discuss the focus group method and our analytical approach.

5.1 Reflections on results

The first scenario contained a phrase that mentioned control over family members and it became very obvious that all of the participants reacted negatively on this. The participants meant that this could be something that cause quarrel and conflicts in the family. Technology monitoring and controlling are seen as violating the personal integrity. From this we draw the conclusion that it is preferable to introduce certain technologies successively. When control is an issue, it is control over things, not human beings. There are of course exceptions in emergency situations, such as when family members are sick, but also if a family member is old or very young. Then it is alright to get information on their status etc. as well as when one self is in danger of some kind.

Where people want control, on the other hand, is on what kind of information they receive. It should always be optional, i.e. the participants wanted to actively choose which information, about what, and when to get the information. This provides an opportunity to select and sort the information, hence making it easier to know what you might ignore and what information you want to react upon immediately. For example, you have friends in one category, and advertising in another, and so forth. In exceptional cases, when the intention is to surprise, it is accepted and also desirable to receive messages and information.

The amount of information was also at stake – it is important that it is not too much. The participants expressed fear for “information overload”. The risk participants saw concerns that important matters might disappear in the crowd. Connected to this is also the issue of reminders initiated by technology, which the participants talked about as irritating. Technology that constantly makes you aware of what you have forgotten is not desirable.

Integrity is not an issue when shopping is in focus. Here the participants showed no anxiety over making much of their personal information available in e.g. data bases. Moreover, it was suggested that technology could in this context very well connect a variety of information that facilitate the shopping.

Overall the participants want individual and situational solutions; this was especially obvious during travels. They also expressed concern over the fact that mobile phones have resulted in a situation where they are expected to be available all the time, something that is stressful and unwanted.

Finally, the participants expressed the view that if too much is made automatic, people might become lazy and stop putting effort in things. This was regarded negatively, while at the same time one participant said that maybe in future we will find cleaning the house meditative. And lastly, the participants stated that things one finds fun and amusing, one wishes to do all by oneself.

5.2 Reflections in relation to the scenarios

It is quite obvious that scenarios must be selected with great care, since they steer the discussion to high degree. Rather it might be preferable to let the participants start talking about their situation in general terms. After that scenarios can be used that lead towards the themes or issues selected by the investigators. Or perhaps a wild and innovative picture could be just as good to use. However, what we are aiming at here is that the discussions were very similar in all three groups, therefore the choice of stimuli material can never be too cautious.

Another issue is that concepts are difficult, e.g. control. In a certain context it might have a positive connotation while in another it is experienced as something negative. Also, a situation where the participant is in control is interpreted differently than when one is being controlled.

5.3 Reflections on the method

Again, the similar discussions in the three groups make us ask how much scenarios influence – how you ask determines the answers. This raises the question of the degree of pressure that moderators can or should put on participants. A more examining attitude from moderators might render a different result. This is however easier done in individual interviews, where the interviewee is alone and not need to feel exposed in front of others. Individual interviews could also generate more personal thoughts and ideas.

Talking about technology is probably more sensitive for men, in a “men only” group. The young men participating in this focus group obviously restrained each other, something which is confirmed by our experiences of other focus group interviews. Probably young men are more apt to uphold their image, and they surely do not want to lose face in front of each other, particularly when it concerns technology. If a vision was expressed, someone immediately saw problems, or announced if solutions already existed.

In contrast, the most open-minded and freely thinking group was the “women only” group. Hence, young women are good at coming up with ideas and visions and not limited by thinking in terms of solutions. For them it is OK to admit that they do not know anything about technology; it might even be expected that young women should not know about technological issues resulting in that young women do not declare themselves as technological knowledgeable, even if they are.

It needs to be remembered though, that even if it is positive and of value that participants in focus groups are creative and inventive, the actual process of creativity that results in products and services, rests with researchers and developers. Thus, focus group participants must never feel any pressure to come up with final proposals for services or products of any kind

We have found that needs and motivators are situated; that is, they are individual, and arise based on the situated reality in which the individual takes part at a certain point of time. From this follows that needs and motivators are not static. As an example of this, a person might want a mobile phone for reasons that can be referred to the motivator Independence that includes the intrinsic feeling Freedom. However, once the person has started to use the phone, it shows that the motivator was only partly fulfilled; Freedom involves many aspects and the concept means different things in different situations, and for different persons.

Additionally, the use of the mobile phone triggers feelings of control, dependence, etc. For instance, one is expected to respond immediately or within a quite short time span; otherwise the person that initiated the communication might believe that you are ‘dead’, in an emergency, or just ignorant. In other words, there is expected use behaviour that is intrinsically linked to the product and that commonly is related to a specific community. This limits the possibility to fulfil the motivator sought for and its intrinsic feeling. In this case, the motivator Independence can not be fulfilled; instead the product and its expected use behaviour become dominated by other people’s motivators. That is, other

people's motivators intrude your own, in this case other people's need of Social Contact and desire for attention (Status motivator).

A further study is thus to analyse the impact of innovations that has been developed through motivator analysis, in relation to situation, context, and expected use behaviour. Finally, we suggest that motivators could be used as a framework for stimulating creativity in innovation processes and as a framework for insightful reflections on suggested solutions.

6 Conclusions

In this last section we draw some preliminary, short and concise conclusions. They are as follows:

Technology should be optional – in other words, the user must be the one initiating and controlling the technology dependent on their needs.

People in general are not delighted to be dependant on technology.

Introduction and/or implementation of technologies for control must be handled with great care.

Information should be generated when asked for.

If a solution should succeed, it is requested that the solution is adjustable to individual and situational circumstances.

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