



Personal Media Day: Semantic portable profile prototyping

## D2.3.2.1 Use cases, concept definition and evaluation

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## Executive Summary

Semantic portable profile prototyping (SP3) project aims at developing a mobile prototype that is able to offer consumers relevant personalised notifications and recommendations based on their interests and context. Semantic user controlled profiles will be tested with different kinds of content and as the key element of a media service.

The definition of the prototype includes two phases; defining and evaluating the concept and making more detailed requirement specification. This deliverable describes the first phase.

Definition and evaluation of the concept and use cases included discussions with end users in Owela online open innovation forum. This deliverable describes the user study, summarise results and define the concept for the semantic profile prototype. The next step is to make more detailed requirement specification for the defined concept.

“Suositusmedia” workspace (<http://owela.vtt.fi/suositusmedia>) was set up in Owela for discussions, polls and ideations with end users. The aim was to gather user views on portable profiles and personalised recommendation and notification services. Three different areas were opened for discussion in Owela: Seven predefined discussion topics, four user stories and an open ideation section. There were totally 74 users in the project: 64 end users, 6 developers and 4 researchers. 59% of these users participated actively discussions in Owela. Totally 426 comments were added during three week discussion period. 17 new ideas or discussions were started by the users.

The user study brought up many issues that need to be addressed in order to make the use of portable profile and related recommendation and alert services acceptable and interesting for the users. We summarise here the main things to keep in mind:

- Users are very concerned about what information is stored and shared about them. When planning the application and user interfaces, *clarity, understandability and ease of use* must be the guiding principles in all aspects of the application.
- The issue of *linking the profile to the real identity* is very important from many points of view. If the real identity is linked to the profile, the requirements for data *security* will be high in the profile service. A simple way of dividing the profile into different levels of security was proposed.
- Users seem to be willing to *update and correct information* that is stored about them. Knowing about intentions and plans is important for making useful recommendations to users.
- Users want to be able to *remove all the data* of themselves out of the service.

- Users must also have an easy way of *controlling how they receive the recommendations and alerts*.
- A common worry that was expressed also in this user study is that people are *afraid of getting a too narrow view* of the world, if they follow things via personalised recommendations. When offering services, it is good to offer alternative views or approaches for finding material and information.

Based on the results, the concept definition, feature list and short use case descriptions were made. Here is the description of the concept:

The aim is to develop a mobile application, which recommends automatically things that the user is likely to be interested in or suggests the user activities and events close to the user's location, based on the user created profile. The user will value the fact that relevant information is brought to her/him instead of requiring the user to be an active "information seeker". The application will support proactive information delivery.

In addition the aim is to make the user interface extremely simple, such as needing only one click and the application can offer some interesting and entertaining content based on the profile, location and time.

The mobile service gives personalised access to different kinds of content such as articles, magazine teasers, events and audiovisual content nearby, TV programs. Context based notifications relating to for example traffic, weather or health issues will be included. Available content will be defined more detailed in requirement specification.

The development is based on the vision of portable profiles where the user is able to create and maintain his or her profile in one place and to use it in multiple services, or to use the same profile for filtering various kinds of content sources and media, that the service is able to gather and filter for the user. The user is in control of sharing his or her own profile information.

Concept definition was complemented with feature list and use case descriptions relating to different ways of creating and updating the profile, getting and controlling of notifications and viewing and interacting with content.

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## 1 Introduction

Semantic portable profile prototyping (SP3) project aims at testing the semantic profile with different kinds of content and explore semantic, user controlled, profile as the key element of a media service. The focus is on developing a mobile prototype that is able to offer consumers relevant personalised notifications and recommendations based on their interests and context.

The aim of the first task in the activity “Definition of the application” is to define and evaluate the concept and use cases of the semantic profile prototyping.

Definition and evaluation included discussions with end users in the Owela online open innovation forum. In this deliverable we describe the user study, summarise its results and define the concept for the semantic profile prototype. The next step will be to make a more detailed requirement specification for the defined concept.

## 2 User studies in Owela

### 2.1 Owela – open innovation platform

Owela (Open Web Lab, <http://owela.vtt.fi>) is an online space for open innovation with users, customers, developers and other stakeholders. It provides tools for gathering understanding of users’ needs and experiences as well as for co-designing new products and services. “Suositusmedia” (“Recommendation media”) (<http://owela.vtt.fi/suositusmedia>) was set up in Owela for discussions, polls and ideations with end users.

The screenshot shows the Owela Suositusmedia website interface. At the top, there is a navigation bar with links for 'Etusivu', 'Keskustele', 'Arviot', 'Ideot', and 'Ihmiset'. Below the navigation bar, there is a section titled 'Käyttötarinoita suositusmediasta' with a sub-header 'Arvioitavat tarinat'. This section contains a list of user posts, each with a thumbnail image, a title, a brief description, the author's name, the date, and the number of comments. The posts include: 'Tulva kesämökillä', 'Suositelut työmatkan varrelta', 'Vinkkejä arjen iloksi', and 'Tekemistä viikonlopuksi'. To the right of the main content area, there is a sidebar with a search bar and several sections: 'Aktiivisimmat osallistujat' (Active participants), 'Viimeisimmät kirjoitukset' (Latest posts), and 'Viimeisimmät kommentit' (Latest comments). The sidebar also features a 'Hae' button and a list of recent posts and comments.

Figure 1. A screenshot of the Owela Suositusmedia website.

## 2.2 Discussion themes and user stories

Three different areas were opened for discussion in Owela to gather user views on portable profiles and personalised recommendation and notification services.

Seven predefined discussion topics were opened, four user stories were presented and users were also able to publish their own ideas and discussion topics. In connection to most of the discussion topics and user stories, a poll was included. Users were not forced to go through all the topics and polls, so the number of comments and the number of answers in polls varied from topic to topic and from poll to poll.

Table 1 includes the titles of all discussion topics, and user stories. The complete discussion topics and user stories are in Appendix 1.

**Table 1. Discussion topics and user stories.**

ID	Title in Finnish	Title in English
K1	Samojen verkkotunnusten käyttö	Using the same ID when logging into different services
K2	Siirrettävä profiili	Portable profile
K3	Profiilin luominen ja hallinta	Creating and managing the profile
K4	Profiilin tiedot	Profile data content
K5	Siirrettävän profiilin käyttäminen eri palveluissa	Using the profile in different services
K6	Automaattisuositukset ja muistutukset	Automatic recommendations and notifications
K7	Täydentävän tiedon suosittelu tv-ohjelmien yhteydessä	Recommending complementing information in connection to TV programmes
T1	Tulva kesämökillä	Flood at the summer cottage
T2	Suosittelut työmatkan varrelta	Recommendations for commuters
T3	Vinkkejä arjen iloksi	Tips for everyday life
T4	Tekemistä viikonlopuksi	Suggestions for the weekend

## 2.3 User submitted ideas

Users could post their own ideas or discussion topics in Owela, and 17 news openings were made. A couple of them were made by the researchers and developers, but most came from users. Table 2 lists and describes the user ideas. The points that came up in these ideas or in discussions that were carried out in connection to them have been included in the sections that deal with the profile or recommendations and alerts. The identifiers and the title of the ideas in Finnish and English can be found in Appendix 2.

**Table 2. User submitted ideas and their brief descriptions. In the Comments column, comments in “ ” are user comments from the discussions, others comments by the researcher writing this report. User comments are not direct translations of the comments in Finnish but they try to capture the essence of the comment.**

ID	Description	Comments
D1	Scanner for ISBN codes in books to store which books one already has and to get more information of books	The idea does not directly deal with profiles or recommendations.
D2	Job recommender – open positions are recommended based on the profile. The profile could be updated based on the job openings that one indicates as interesting.	A recommendation application.
D3	Developer question: What kind of health information would people be ready to share in order to get real time location based alerts of health hazards.	” Better data security if there are different sites for different health issues and the users chooses which ones to follow” ” It would be good to get also up-to-date information and not only alerts relating to different illnesses.”
D4	An application for recommending apps. The application includes advertising and users are motivated by getting special offers that are assumed relevant for them based on their profile.	A recommendation application. Received some positive comments from other users.
D5	Official recommendation – product or service evaluations could be made only by people with verified identities and without direct link to the products or services that are being evaluated. The purpose	An application for verified identity.



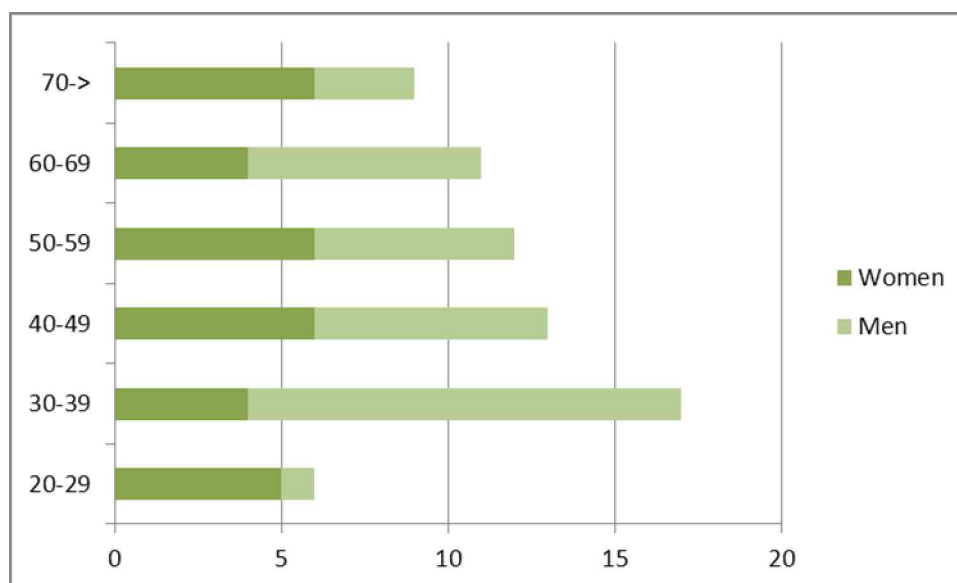
	would be to make the evaluations more truthful and reliable.	
D6	Dice application for getting recommendations as to what to do possibly with friends the coming evening.	A lot of discussion about different options of making recommendations to a group of people.
D7	Christmas present scanner – an application for children to make a wish list with a mobile when they see potential presents in shops. The application could fetch information of the prices in different stores.	
D8	Product information is often printed in small font size and with little contrast to the background. The opportunity to fetch the information by scanning the product code was proposed.	.
D9	Travel agency 2.0 that looks for suitable holiday destinations and deals based on profile and other information given to it.	A recommendation and watch-dog application based on some specific and some more general information of interesting destinations.
D10	Instead of a profile, the user makes permanently stored precise queries. When a hit is found, a link is set to the user; payment may be required if the user wants to read the whole article. One motivation: the titles are often misleading, so the actual content of the story should be used when evaluating its match to the user interest.	
D11	Information is needed for elderly people about their rights and duties, about available service and the costs of producing these services.	Would require combining and processing information from many different sources, and this information should be processed so that relevant information can be filtered based on individual profile.
D12	Real time data out of items in a shop.	

D13	Alert when there is an offer of a user defined item. Could be linked to location so that only offers from shops locating by close are shown. (Expands the idea D14)	<p>”Offers could be made also of items that could replace the user requested item.”</p> <p>“This type of application needs good features for controlling what offers are sent to the user so that he does not get too many offers.”</p> <p>”There are many good alerting services like from libraries when the loan time is almost up, and also dentist and health centres send reminders of reserved times, and of updates to one’s health records.”</p>
D14	Researcher: One could make a list of items to buy and when one is close to a shop where this item can be bought, an alert is given.	“Suitable for more rare items to be bought like for birthday presents.”
D15	An evaluation service for wellbeing and health care service in the same way as for restaurants	”A service Palveluvaaka will address this regarding public services.”
D16	An application to take away information of a person from social media services. Would be useful for example after a person dies.	
D17	Expanding T2 “Recommendations for commuters” to cover the whole of Europe.	”Navigators and Google maps offer this kind of services.”

## 2.4 Statistics

For getting users to participate in Owela, an invitation was sent to previous Owela users and also a Facebook advertisement was used. There were totally 74 users in the project: 64 end users, 6 developers and 4 researchers. 59% of these users participated actively discussions in Owela.

The age of registered users varied from 20 years old to 74 years old. 47 % of users were women and 53 % men. Figure 2 shows the distribution of users based on their age and gender.



**Figure 2. Age and gender distribution of Owela participants.**

In total, 426 comments were posted during the three week discussion period. 17 new ideas or discussions were started by users.

### 3 Analysis of Owela discussions

#### 3.1 Portable profile and usage in different services

Three discussion topics (K1, K2 ja K5) were presented for the Owela participants.

The first topic dealt with logging into different services with an existing user account, as offered by Facebook and Google. As could be expected, users saw benefits of using the same id in different services (46 %), but they were also suspicious of how information will be shared between services (42 %) out of the total 26 answers. 8 % of the participants told that they do not have experience of this.

Users' views are well captured in this comment:

*”Periaatteessa samojen tunnusten käyttö helpottaa elämää ja ideaalitulassa tarvitsisi vain yhdet tunnukset, joilla pääsisi kaikkiin sovelluksiin, mutta käytännössä tietojen siirto palveluiden välillä arveluttaa. Samoin kaikki tieto, mitä palvelut keräävät käyttäjiltä usein käyttäjien itse sitä ymmärtämättä.”*

The discussion brought up the idea of different security levels of the profile. It was proposed that entertainment services and other such unofficial services should have different profile that those that requiring information of the real identity of the users.

In the poll, the following question was posed to the users: “In which situations would a portable profile be useful? It there something about it that makes you

hesitant about using it?” The answers were very much in line with those regarding using the same log in id in different services. The 19 answers were distributed in the following way:

- I'm hesitant about it: 47 %
- This feels useful: 47 %
- I could use a service like this: 21 %

We can see that one fifth of respondents estimated that they could use a portable profile service.

The following comments reflect respondents' expectations and worries regarding the portable profile:

*”Siirrettävä profiili tuntuu käyttökelpoiselta ja säästää aikaa etenkin jos siihen voi tarvittaessa lisätä tai poistaa tietoja.”*

*”voisin tällaisen käyttöä kuitenkin kokeillakin, varsinkin, jos omien tietojen kontrolli (profiili + verkkokäyttäytyminen laajemminkin) on ratkaistu hyvin.”*

*”Jos tuo profiili olisi sellainen, että sen tietoja ei voi kopioida, niin sitten ehkä. Hieman niin kuin pala paperia pöydällä: voin siirtää sen mihin tahansa pöydällä tai jopa tiputtaa lattialle, mutta samalla voin ottaa sen myös pois kaikkialta eikä siitä jää jälkiä.”*

The respondents see that the portable profile could be beneficial and save time but it would be important to be able to add and remove items from the profile. The importance of user controllability is emphasised. Users should be able to control also how the profile is used in different services, and the user should be able to remove the profile without leaving any traces of it.

Additional ideas and requirements of the users included:

- creating a profile for authorities like Kela (social security benefits)
- user's information should not be visible to other users
- the service could include relevant links to site with information about the user's

Users were asked “To which services you could share your profile, so that the service could be personalised to match your interests? In which services do you experience, that recommendations would be useful to you?” (K5) and they were given a list of options to choose. We got 13 answers and they were distributed in the following way:

- Services provided by the municipality 62 %
- Event services 54 %
- Location and interest based notification service 46 %

- Recommendation service for TV programmes (e.g. Skimm.tv) 38%
- News site 38%
- Online store 31%
- Nowhere 23%
- Video service with videos from nearby locations (e.g. Stadi.tv) 23%
- A web site with magazine type content 15%
- Automatic advertisement service offering location and interest based advertisement 8%
- Online travelling agency 8%

More than half of the respondents were ready to share their profile with the municipality services and event service providers. Also location based services, TV programme recommendation services, news site and online store were places that more than a third of the respondents were ready to share their profiles with.

In this poll, an online travelling agency was not regarded as a place to share one's profile with, but one of the user presented ideas (D9, Keihäsmatkat 2.0) dealt with offering travelling services based on user profiles. This idea got support from other users as well.

23 % of the respondents were not ready to utilise the profile in any service.

Regarding sharing the profile and getting recommendations the following issues were presented:

- the true added value:

*”En näe mitään lisäarvoa. Sitä paitsi, onhan se aivan tavattoman rajoittavaa, jos profiilin perusteella radiossa soi joka päivä samat kappaleet ja televisiosta tulee vain testikuvaa.”*

*”En vain ymmärrä oikein profiilin perusteella tehtyjen suositusten lisäarvoa itselleni/suosittelijalle.”*

- data security:

*”Hirvittää ajatus siirrettävästä profiilista, että yhä useampi tietäisi yhä enemmän minusta. Olkoonkin, että itse päättäisin, minne ja mitä siirtyy, niin jossain vaiheessa sitä kuitenkin klikkaa jotain väärin, ja hups, taas menee profiilini jonnekin.”*

## 3.2 Profile data content and creating and managing a profile

Profile creation and control were discussed in discussion topic K3, and the profile data content in discussion topic K4.

### 3.2.1 Profile data content

When asked about linking the profile to real identity, many respondents replied with preferring anonymity. It was mentioned, that the service provider should not know anything more than what is necessary to make recommendations in that particular service. Another view was that an online store could have the same information that a normal store gets when a person visits a shop and the sales person sees the customer. This includes the gender and age. One user mentioned that she would expect the service provider to improve the service with the help of the information provided in the profile. There could be financial benefit to the user who shares her profile, or there could be qualitative and functional benefits.

Respondents' attitudes are reflected in the following comments:

*"Noissa kyselyissä ei onneksi pyydetä tarkkaa syntymäaikaa, vaan ikä ilmoitetaan esim. 30-40 vuotta tai yli 63 vuotta."*

*"Hömppäprofiliin laittaisin tietoa sen verran mitä kaupassakin itsestä on silmämääräisesti tarjolla, eli iän kymmenen vuoden tarkkuudella ja perheeseen 30% virhemarginaalilla. Ja tuokin vain siinä tapauksessa, että siitä on rahallista hyötyä."*

*"Mietin ettei minua kyllä haittaa kun kauppaketjut tietävät ostotottumukseni, lukutottumukseni sun muut... Kauppa mielellään käyttäköön niitä palvelujensa ja valikoimiensa parantamiseen."*

### 3.2.2 Creating the profile

Discussion topic K3 asked as a poll *which of the following ways of creating a profile would be interesting for you*. We got 13 answers and there were distributed in the following way:

- Using social media services, such as Facebook profile 69%
- By adding information about my plans and interests by myself 62%
- Automatically updating information based on what is express about my interests in different services (thumb up, comments ) 54%
- Adding locations on map indicating my relevant locations, like where I live and work and where my summer cottage is located 23%
- Storing my regular routes with the help of GPS data 23%
- Automatically updating based on my browser history (browsing, search terms) 15%
- Giving my bookmarks to be analysed 8%
- By letting an application to track my location in real time 8%

Even though the respondents were very cautious about sharing their profiles as reported in Chapter 4.2.1, the answers to this poll indicated a lot of willingness to use different data sources for creating the profile.

The majority of the respondents were ready to utilise their information and stored activities in social media services to create the profile. Regarding Facebook, the respondents were mainly concerned about what information will be transferred back to Facebook and how well Facebook can track their behaviour on sites outside of Facebook. This can be seen in the following comments:

*” Suositusprofiiliin ymmärsin saavani itse valita, annanko esim. Facebookin tykkäykset tiedoiksi vai enkö. Se ei siis huoleta. Facebook-tunnuksilla käytettävät muut sovellukset taas tulevat facebookin "valvonnan alaisiksi", enkä pidä siitä, että facebook seuraa minua kaikkialle (esim. Iltalehden sivuille).”*

*” Mielestäni on ihan ok kirjautua mm. facebook-tunnuksilla muuallekin, mutta pitäisi olla mahdollisuus ettei facebook kuitenkaan saisi niitä tietoja mitä muilla sivuilla tekee. kuitenkin tämä on mahdotonta?”*

Regarding automatically updating the profile, respondents found it more acceptable to use information of their own activity, like commenting and Likes in Facebook, than using logs like browsing history. This is likely to be because likes and comments are active actions, and when making them users are aware of that at least some other users will see the result of this activity, and they are not something users regard as private activity like searching. Respondents did not accept real time tracking of their locations, but a quarter of the respondents was ready to store their routine routes automatically.

Respondents regarded it as important that they have the opportunity to define and store information of their interests and plans. Almost two thirds of the respondents were ready to manually complement this type of information into their profiles.

### 3.2.3 Managing the profile

The opportunity to control and manage their own profile is very important to the users. It must be possible to remove all data, if the user wants to do that.

The respondents also discussed what happens with the profile data in external services and while it is being transferred between services.

One respondent brought up the issue of legally defining who may have access to the profile data and suggested that accessing profile data would be logged the same way as for example accessing health records is being logged. He also pointed out that information of daily routes may be sensitive data that interests criminals.

Many comments deal with the need of ease of use and understanding. This requirement applies to all phases of the profile life cycle: creating, managing how services may utilise the profile, sharing the profile and deleting it. If the service is

experienced as difficult, the user will be afraid of making mistakes and revealing too much of her or himself. This makes the user quickly stop using the service.

The fear of becoming bombarded with advertisements is widespread among users. It is crucial for the service provider to clearly address this fear and convince the user that the user is in control and can manage the amount of messages and information that will be pushed to the user.

Ease of use, simplicity, adapting to the life situation of the user and the ability of learn about the user came up also in connection to the use story y T3 “Tips for everyday life” as can be seen in this user comment:

*”Tärkeää on pitää homma yksinkertaisena ja helppokäyttöisenä. Palvelujen ”älykkyyks” ja kyky oppia käyttäjältä ja käyttäjästä on hyvä ominaisuus (vrt. Amazonin kirjasuosituksset).”*

Users were also asked about the *opportunity to combine one’s own profile with the profiles of friends or family members*. Some users found this very practical particularly when planning an evening together with friends. This became very clear in the discussion in connection to the user idea D6 (“Noppasofta”).

*” Kavereiden kiinnostus linkitettyä omaani, olisi hyvä juttu, kun suunnittelemme yhteisiä vapaa-ajan viettomahdollisuuksia tiettyä ajankohtana. Se nopeuttaa valintoja.”*

The problematics of combining several profiles and making a recommendation for a group was discussed. The question is whether to emphasis some persons’ profiles, like would probably be the case when making a recommendation for a family with children. If all profiles should be given equal emphasis, options include either offering something that is least opposed, or to make a aggregation that includes several items, based on the most interesting ones for the different members.

It became obvious that people do not want to share their profiles with everybody else. The opportunity to share recommendations to peer groups and networks was requested by a user.

### 3.3 Recommendations and notifications

This chapter describes users’ views and attitudes towards recommendations and especially towards a user profile based proactive notifications.

#### 3.3.1 User stories

The aim was to gather User views on personalised recommendation and notification services was gathered with help of four user stories. The stories T1 (Flood at the summer cottage) and T2 (Recommendations for commuters) describes especially use cases of alerts and proactive notifications. In the stories T3 and T4 emphasise more using of media content.



In the Table 3 there is the summary of the results of polls presented in connection to the user stories. Users evaluated stories with three scales of options: interestingness, usefulness (generally) and useless for me. A user was able to choose one or more choices.

**Table 3. Summary of the polls in connection to the user stories T1-T4.**

Story	Number of answers	Interestingness %	Usefulness %	Useless for me, %
Flood at the summer cottage (T1)	26	35	58	27
Recommendations for commuters (T2)	21	33	38	48
Tips for everyday life (T3)	21	38	29	52
Suggestions for the weekend (T4)	21	43	33	52

The most important aroused issues are shortly described below. Comments of user stories have been handled more detailed in the following chapters relating to different features and functionalities.

### **Flood at the summer cottage (T1)**

Mainly the discussions were positive and the service was experienced useful (58%). The users would rather like to have alerts beforehand and not after the storm or flood have already happened. Users were a bit suspicious about the service providers and the accuracy of the notification compared to the location of their own summer cottage. They also pointed out that there are other available services for guarding summer cottages and sometimes help of neighbours is enough. Users will be easily irritated if notifications are not relevant enough or if there are too many of them. Users are worried about their privacy and giving location information.

### **Recommendations for commuters (T2)**

” Recommendations for commuters” –story included an example of storing one’s route profile with help of GPS location recorder and utilising that in recommendations. The example included notifications about sales offers and services nearby the route as well as opportunity to browse other content such as nearby events, news and stories. One example was traffic jam notifications about route to work and this was experienced useful feature. It was seen important that a user can control whether the application is on or off. Some users experienced that recommendations about new services and sales offers would be useful. Another user thinks that the service is for helpless persons. Users are worried about sharing own information. Description of the story woke up also very positive comments such as “*Marvellous!*” (“*Erinomainen!*”) and “*This is exactly what is*

*needed!*” (“*Siis juuri tuollaista kaivattaisiin!*”), but half of the users found that the service would be useless for them.

### **Tips for everyday life (T3)**

The discussion were very positive, although 52 % of respondents experienced the service useless for them. Browsing content with help of pictures was found interesting. Simplicity, ease of use, possibility to adapt to a user’s situation and ability to learn about a user was found important features. Users also wanted to be able to define which topics are not interesting to them at all. People were afraid of that recommendation would be too general and not accurate enough. They were also afraid of missing some important topics if they just follow things via personalised recommendations

### **Suggestions for the weekend (T4)**

In connection to the story there were discussions about which topics, such as events and TV-programs, users would like to get recommendations. These have been discussed more detailed in the next chapter. The biggest concern of users was getting too many notifications. 43 % of users experienced the service is interesting, but still 52 % of users found service not useful for them.

## **3.3.2 Content for recommendations**

In this chapter, users’ opinions relating to different content recommendations have been summarised.

### *Events*

A message of when the ticket sale of an interesting event is started was regarded valuable by users. Recommendations relating to events were also supported in evaluations of ”Suggestions for the weekend” - story. Users had some suspicions as to how much added value event recommendations will bring when compared to existing event services where events can be browsed based on event categories. 54 % (N13) of users were willing to share their profile to event services.

### *Announcements*

Notifications about traffic jams raised interest: ” *ruuhkatiedot olisi kiinnostava juttu*” (K6). They got positive feedback also in comments of ”Recommendations for commuters” -story (T2).

Other situations where users would like to use notifications:

- The political topics and decisions in the municipality that have an impact on the user would be suitable to follow with the help of notifications. For example users were interested in urban plans of neighbouring area: ” *Tuo lähialueen kaava oli hyvä heitto, koska kuntien sivut eivät aina ole niitä kaikkein helpoiten löydettävissä olevia...*”

- Advance notifications of a storm or flood nearby e.g. summer cottage and information about nearby locating service providers that could help in this situation. (T1).
- Notifications about interests, work and hobbies related issues to be shared to similar minded users. *”Kiinnostuksen, työuran, tutkimuksen ja harrastusteni alueiden ja kehittämistä koskevat tiedot olisi mukava tietää ja tiedottaa niistä sitten vastaaville vertaisryhmille edelleen.”*
- Notifications about delays and other relevant things at railway stations and at the airport. Notifications of next performers in big events. *”juna-asemilla junan myöhästyminen, lentokentällä maahan tullessa, isoissa tapahtumissa kuten konserteissa jos tapahtuu jotain viivytyksiä, tai vaikkapa Suomi-areenan tapaisessa voisi saada tietoa seuraavista esiintyjistä (kunhan on tilannut ne ensin ja vaikka itse valinnut suosikkinsa)”*.
- Notifications from library, dentist and health centre are examples of existing services that are useful to users: *”Myös kirjastoista voisi tulla viesti, kun haluttu teos on paikalla. Nythän tulee vain, että laina-aikaa jäljellä muutama päivä. Hammashoitolat ilmoittavat ja muistuttavat varatusta vastaanottoajasta. Terveysasemakin lähettää tiedon kännykkään, kun omaa terveystietoa on päivitetty.”*

Ideas and started discussion topics from developers and researchers:

- 112- alarms near home: *”olet klikannut kartalta oman kotisi sijainnin ja aina kun 112-hälytyspalvelun tapahtumia on 1 kilometrin säteellä kotoasi, saisit sms-viestin proaktiivisesti kännykkääsi”* (T1)
- Watch dog application for health issues such as dust situation for asthmatic or heat for elderly: *Terveysvahti; millaisia tietoja olisitte omasta terveydestänne valmiita kertomaan verkkopalvelulle jos saisitte palvelun terveysvahdin, joka kertoo teille reaaliaikaiseen paikkaanne liittyen mikäli teitä uhkaa jokin ilmiö (katupöly astmaatikka tai helle vanhusta tai keksi-itse-tähän-lisää)(D3)*
- Weather notifications based on a user's hobby e.g. sailing, available product notification for collector, water conditions of beaches, vacant places for daycare, age based invitation for optician. *”myrskytiedotus veneilijälle, tuulitiedot purjelentäjälle, katupöly- tai siitepölytiedotteet allergisille, tonttien tuleminen myyntiin halutulla alueella, keräilijälle tieto tuotteen tulosta myyntiin esimerkiksi nettihuutokaupassa, iltapäivähoitopaikan vapautuminen lapselle, lähiuimarantojen levätiedotteet, vapautunut pelivuoro esim. keilaus, tennis yms., pakollinen näöntarkastus ajokortin ikätarkastukseen sisältäen lähialuiden optikkojen tarjoukset”*(K6)

Users' comments indicate that this kind of messages can be very annoying and burden users if the messages are not relevant enough and if there are too many of them.

### ***Advertisement***

Most of the users were afraid of getting too much advertisement and they were not willing to share their profile to personalised advertisement services.

Some users were interested in getting information about new services and special offers as long as advertisements are made with high quality and they are relevant to the user's situation. When the user has plans to buy something, he or she appreciates advertisements and recommendations relating to this item. A user suggested a service, where a user is able to indicate plans of his or her bigger purchases and will get a notification when the product is on sale or it can be bought at a certain predefined price (D13). This idea got endorsement and positive feedback from other users.

### ***TV-programs***

38% of users (N16) wanted to have automatic alerts when a certain programme starts on TV (K6). 38 % of users (N13) were ready to share their portable profiles to a TV-program recommendation service (K5).

Some of the users found that they get enough information about TV programmes in the newspapers, so a TV programme recommendation service would not be useful for them. Some users wished to have TV programme recommendations based on their interests, because otherwise they easily miss programmes that they would like to watch. One user felt that instead of getting notifications when a programme starts, she would like to have recommendations afterwards based both on her own interests and friends' recommendations. This way she could create own list of preferred TV-programmes.

*” Katson vähän televisiota ja sen takia menee joskus ohi sellaisia ohjelmia, jotka olisin halunnut nähdä. Jos tulisi suosituksia kiinnostukseni kohteista, ei tarvitsisi kahlata kaikkia ohjelmia läpi, vaan valita suosituksista. Pitäis olla niin, että suositukset poimittaisiin tietyistä aiheista, esim. kirjat, eläimet, matkustus.”*

*”Itse televisiottomana en kaipaa tietoa kellonajoista ja kanavista, mutta jälkikäteen omien kiinnostusten kohteiden ja kavereiden suositusten yhdistelmä voisi rakentaa ja ehdottaa minulle omaa listaa eri katselumooodeihin.”*

### ***Recommending additional information for TV-programmes***

The user study included discussions about users' willingness to get additional information relating to the TV-programme that they are watching.

Here are the answers of 9 users as to which kind of TV-programmes they would be interested in having additional information:

- During news broadcasting I would be interested in getting additional information / links about the topics relating to news. 67%

- I would be interested in getting more information about the topics that were handled in just finished documentary (e.g. Avara luonto). 67%
- I would be interested in some additional information / interactivity, if it would be available on my TV-screen. 67%
- I would be interested in getting messages from my friends and/or to discuss with my friends while watching entertainment (e.g. Putous). 56%
- I would be interested in some additional information / interactivity, if I would get it on my mobile phone or tablet or laptop. 56%
- I would be interested in getting current description of teams before the beginning of the game (e.g. ice hockey game). 44%
- General additional information without personalisation would be enough for me. 44%
- I wish to have additional information recommended and sorted based on my profile. 44%

There is interest in getting additional information in connection to different types of TV-programs.

Some additional opinions and comments from users are presented below. One user would accept additional information on TV screen but not on the mobile phone. Another user would like to be able to order additional information to email. Some users think that there is already too much information available and web links that are provided in many TV programs irritate them.

*” Jos kyse on tv-ohjelman päälle tai sivuun tulevasta infosta, voisin jotenkin hyväksyä, mutta en kännykkään.”*

*” minusta kaikkea tietoa on saatavilla jo ihan liikaa; ei niitä jaksa millään käyttää. inhottaa jo tuo kokema tv-uutisissakin että lisätietoja saa www....”*

*” Lisätiedot yms. voisi tilata myös sähköpostiin joka tulisi sinne ohjelman jälkeen tai ennen sitä?”*

*”Minusta olisi kiva esittää lisäohjelma ehdotuksia jo käsiteltyihin tv- ym. ohjelma-aiheisiin. Saattaa olla että tietyt näkökulmat puuttuvat kokonaan tai taustoja ei kuvata ollenkaan. Silloin joko täydentävää ohjelmaa tai linkkejä mistä täydentävää tietoa voi löytää. ”*

### ***Other content***

Based on the discussions and comments in the user study, we present a list of additional content and topics of which users would like to get recommendations:

- hobbies and opening hours of related services
- services of Kela (The Social Insurance Institution of Finland)

- searching for rented accommodation
- books
- campaigns and initiatives
- jobs (D2)
- service recommender (D4),
- offers (D13)
- health (D3) and health services (D15)

One user wished that profile based recommendations would be processed further into executive summaries:

*”Asioiden tiivistäminen oman profiilin aiheista: ” jos minulla olisikin mahdollista tilata "executive summary"t oman alani jutuista ja lukea niistä vain ne joilla on aidosti väliä.”*

A common worry that was expressed also in this user study is that people are afraid of getting a too narrow view of the world, if they follow things via personalised recommendations. Serendipity was wished for recommendations: ”*Paljon uutta ja kiinnostavaa olen löytänyt nimenomaan siksi, että uskallan liikkua oman viitekehyksen ulkopuolelle.”*

Findings from social media and recommendations from friends are seen as important channels for finding new interesting content. Opportunity to forward recommendations to contacts and peer networks was seen important:

*”.. mieluiten selailen ja käytän sosiaalista mediaa suosituksieni antajina. Kaveriporukalla kun on ajoittain samoja mielenkiintoja kuin itselläni ja toisaalta kiinnostavaa sisältöä on myös "tuolla jossain".”*

*”Kannatan profiilini ja uutisien/tapahtumien suosittelua ja jakamista vastavuoroisille vertaisryhmille, ystäville ja samanhenkisille järjestöille.”*

### 3.3.3 Notifications

When analysing users' answers as to which services they are willing to share their portable profile, 42 % of users found location and interest based automatic notifications interesting (the total number of answer to the poll was 13). However only 8% was willing to share their profile to location and interest based advertising services. (K5)

Users were asked to think about situations where they would have appreciated automatic notifications based on their interests (K6). Users were also able to select topics from predefined list.

The result of the poll is as follows: (16 answers)

- When ticket sale of an interesting event is opened (50%)
- Traffic jam on the way to work (44%)
- Urban plan for my home area is ready (44%)
- An interesting TV programme is starting (38%)
- A new book is published by my favourite author (31%)
- *None of the above* (25%)
- Notification of air quality (25%)

A quarter of the users (N16) did not want any notifications of any of the defined topics.

*”Haluan säilyttää omatoimisuuteni enkä siirtyä koneohjaukseen”*

Some users search information about e.g. traffic situations and sale offers by themselves on the net and they do not feel that automatic notifications would be useful for them.

### **Context**

A user’s location is essential information for making relevant recommendations based on user’s situation. One user points out that the added value of mobile is in serving users based on their location: *”Mobiilin on ärsyttävä käyttäjää sijaintitiedon perusteella ja saatava aikaan käyttäjässä reaktio siellä, missä palvelu on.”*

Users are concerned about their privacy and sharing their location information. This came up in when discussing the “Flood at the summer cottage” -story.

In the discussions relating to profile creation and management users were asked how they would be willing to give their location information. 23 % of users (N13) were ready to add locations, such as home, work and summer cottage, onto a map and to save their routine routes with the help of GPS-coordinates. Only 8% of users were willing to let a service automatically follow their current location.

There is a difference in the kind of recommendations that are relevant in the user’s neighbourhood and when travelling. When moving in familiar areas, greater emphasis is on current news and new information whereas even basic information is of interest in unfamiliar places.

One user commented that ”Recommendations for commuters” (T2) type of scenario could be useful on vacation. Another user suggested a location based recommendation service for tourist attractions (D17). The idea included saving interested attractions and getting reminders when nearby the location.

### 3.3.4 Burden of notifications

Many people expect notifications to be irritating and burdening. Notifications are wanted only on important issues that require (almost) instant responds.

25 % of the respondents (N16) did not want automatic notifications of any of the predefined topics in discussions (K6). Users were worried about getting too many and too irrelevant notifications.

*”Tietyistä asioista, joita en muuten ehdi tarkistaa, voisi viestiä, että nyt tapahtuu jotain tärkeää. Muuten ei ole väliksi. Saattaa hermostuttaa jos koko ajan piippaa...”*

*”Ympärillä on nykyisin jo ärsyttävän paljon melua, etten ainakaan piippausta haluaisi kuin aivan poikkeustapauksissa.”*

A user created horror story about getting too many notifications during shopping in the mall is seen below:

*”Leena on kaupassa vaikkapa Sellossa, hän on juuri päässyt töistä ja hieman kiireinen, lapset pitää hakea päiväkodista ja viedä harrastuksiinsa. Puhelimeen tulee kuusi tarjousta sellon erikoisalennuksista, jo parkkihallissa. Toisessa ketjumarketissa asioidessaan toinen ketjumarket houkuttelee Leenaa paremmilla tarjouksillaan. Yläkerran sellosalissa alkaa konsertti jossa esiintyjä jota Leena on joskus kolme vuotta sitten facebookissa ilmoittanut tykkäävänsä. Kauppakeskuksen kuntosalista pärähtää mainos kun Leena kävelee makkarahyllyn ohi. Kassajonossa 30 edellä olevan asiakkaan puhelimiin kilisee erilaisia tarjouksia ja houkutusia ja Leena on päänsärkyisenä äreällä tuulella. Päästyään vuorollaan maksamaan hän ärisee kassatyölle jolla rintapielessä merkki harjoittelija. Samaan aikaan kännykkä muistuttaa että kuudelta kanavalta on yhtäaikaa tulossa Leenan lempiohjelma vuodelta kivi ja miekka. Päiväkotiin päästyään Leena on viskannut puhelimen kehätielle aiheuttaen vastaan tulijan tuulilasinsärkyä ja kuudenkymmenen auton ketjukolarin. Juuri ennen särkymistään kännykkään tulee ilmoitus kolarivakuutuksen erääntymisestä kertova ilmoitus.”*

The problems indicated in the story can be rejected if the user herself is able to check recommendations. For example, the opportunity to check the current special offers before entering the mall would help to decide into which store to go to do the shopping.

### 3.3.5 Managing notifications

It is very important that a user can control the notifications.

In connection to the ”Recommendations for commuters”-story, a user pointed out that it should be easy to define whether the service is on or off: *”Tämä palvelu täytyisi olla helposti vaihdettavissa on/off. Liikennenuhkatiedotus olisi hyödyllisin.”*



A user should be able to control whether she or he wants recommendations as automatic notifications or to be checked at a service. Also, control for different types of notifications is needed in order to avoid getting too many notifications. Recommendations should be accurate and relevant.

### *In which form notifications are wanted?*

There were discussions about in which form and to which devices notifications are wanted: text message to mobile, email or to mobile application. Everybody does not have the latest mobile phones and browsing content with mobile is not always possible:

*”Kyllähän nuo kaikki vaihtoehdot on hyviä, jos asia vain kiinnostaisi. Itselläni on kuitenkin ihan vain peruspuhelin, johon tuskin tuollaista sovellusta voisi edes ladata tms. joten kaipailisin ihan perussähköpostiuutiskirjettä vaihtoehdoksi.”*

*”Ai niin, peruskännykstä ei mobiilia selata. siinä mielessä tekstari kattaa suurimman osan käyttäjistä”*

Some users experience that a notification on mobile is interesting option, because they rarely check information on the net. Text message to the mobile will be accepted for example relating to traffic jams, but not for receiving personalised advertisements.

Some users would like to get notifications as emails, but most of the users were afraid of getting too much spam. *”Minusta alkaa tuntua siltä, että pian en enää hallitse itse sitä tietoa, joka tietokoneellani on. Ala vähitellen luopua kaikista profiileista ja olen jo alkanut perumaan tilaamiani tiedotteita yms., kun sähköpostiin tulvii ihan liikaa viestejä.”*

Also this comment leads to the idea of adding features for analysing and summarising recommended information. An example of this type of service is paper.li. It aggregates the most important tweets from the persons that the user is following and creates a more readable summary than the Twitter home page. Also Facebook tries to aggregate all the updates relating to the same topic.

There were different opinions whether recommendations should be automatic notifications or personalised browsable content on mobile application.

A user suggested that “Recommendations for commuters”-story would work better as mobile application which shows the most important recommendations based on a user’s location and time of a day.

Also in connection to “Suggestions for the weekend”-story, a user mentioned that she would rather use the described services so that she would check what is recommended in the service when needed. *”Kyllä tuollainen ”viikonloppuvinkkaaja” olisi ihan hyvä. Käyttäisin sitä kyllä ennemminkin niin että tarpeen tullen itse tarkistaisin, mitä siellä ehdotetaan, kuin että viestejä tulisi vaikka menot on jo sovittu.”*

Another user preferred mobile location based notifications arguing that there is no added value in mobile if it is "browse when you like" type of service: "*Mobiili ei tuo mitään lisää, jos kyseessä on "selaa silloin, kuin sinulle sopii" sovellus*".

Users should be able to control how notifications and recommendations are delivered.

## 4 Concept definition

### 4.1 Vision

The long term vision of the project is summarised in this chapter.

During any given day, a user will use many different devices in different times of the day, in different roles and social contexts. The goal is to be able to provide relevant personalised notifications and recommendations based on a user's interests, needs and context.

This creates requirements for versatile user modelling. User profiles should include and take into account

- explicit interests (e.g. own health, hobbies, stock ownerships)
- places (e.g. home, summer cottage, workplace, location of hobbies, car routes)
  - and place related interests
- time (e.g. working time, weekend, holiday)
- plans and intentions
- social networks (e.g. friends, family, work)
- social context
- combining different profiles (e.g. common interests of a family) for group recommendations

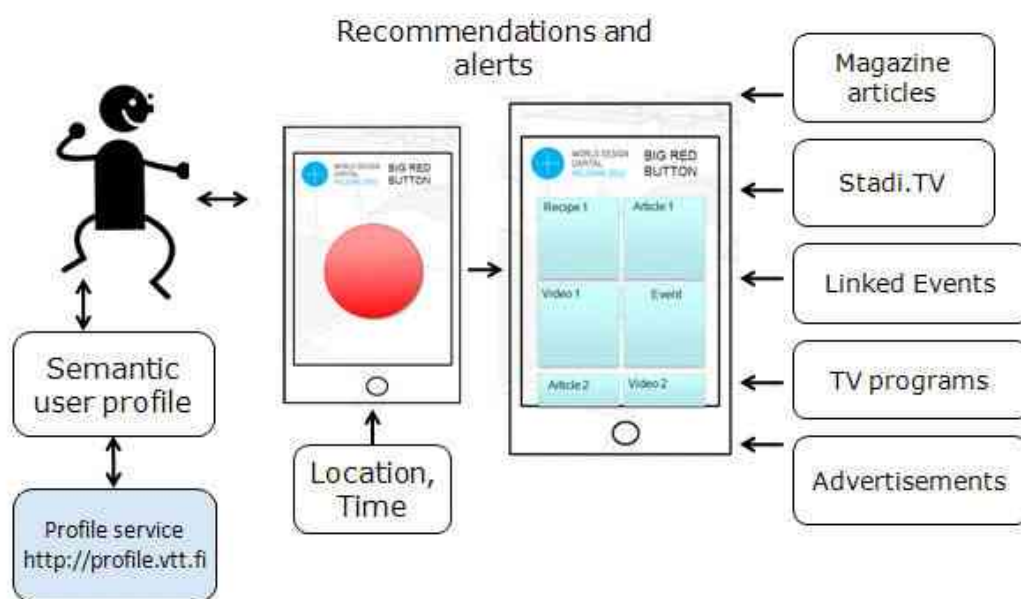
The profile is usable in different services.

The future business model will be based on a service, which is not only an entertaining service for spare moments, but also a value adding and even problem solving proactive service for consumers. The service is a helper for the user, helping the user manage her time better and giving meaningful hints and entertainment to the busy consumer that uses media for short periods of time.

## 4.2 Concept

The aim is to develop a mobile application, which recommends automatically things that the user is likely to be interested in or suggests the user activities and events close to the user's location, based on the user created profile. The user will value the fact that relevant information is brought to her/him instead of requiring the user to be an active "information seeker". The application will support proactive information delivery.

In addition the aim is to make the user interface extremely simple, such as needing only one click and the application can offer some interesting and entertaining content based on the profile, location and time.



**Figure 3 The concept of the mobile prototype**

The content that the application can offer during the project is either linked to events or different locations in Helsinki, or magazine type of content. In other words, the mobile service gives personalised access to different kinds of content such as articles, magazine teasers, events and audiovisual content nearby, TV programs. Context based notifications relating to for example traffic, weather or health issues will be included. Available content will be defined more in detail in the requirement specification.

The development work will be based on the vision of portable profiles where the user is able to create and maintain his or her profile in one place and to use it in multiple services, or to use the same profile for filtering various kinds of content sources and media, that the service is able to gather and filter for the user. The user is in control of sharing his or her own profile information.

### 4.2.1 Features and use cases

Creating, managing and using the profile should take into account the concerns and requirements that came up in the user study. Summary of the results of the user study is presented in the Conclusions chapter.

The list of different preferred features of the prototype is presented below. Roadmap for implementation will be defined in requirement specification.

#### Features:

- The user can create and update a profile using a mobile device.
- The profile will be automatically updated based on the user's activities like commenting and reviewing (thumbs up or down).
- A profile can be created based on the user's social media accounts (Facebook analysis).
- The user is able to share only part of his or her profile to a service using the portable profile (The profile need to be modular in a way that is easy for users to understand, use and manage: Demographics, interests, intentions, real identity, ...)
- A user is able to connect his or her profile with those of the friends and to get recommendations based on this combined information.
- A user is able to
  - indicate meaningful places of his or her life
    - on a map (e.g. home, work place, summer cottage, hobbies) or
    - based on GPS-coordinates,
  - get personalised notifications and recommendations out of different kinds of content in the same service,
  - get notifications based on his or her interests and context (push),
  - control how he or she will receive notifications (allow or not, how often, which topics or conditions),
  - browse recommended content (pull),
  - search content (this provides the user an alternative way of finding material and information),
  - give feedback on the content (thumbs up or down) and save content as a favourite,
  - see which recommendations and content his or her friends have liked, and

- share recommendations and notifications to his or her social network. (support alternative way of finding content)

The use cases below illustrate the features mentioned above.

### **Use cases**

#### ***Use Case 1: Creating and updating a profile***

Liisa's friend Leena has praised "Just for you" -service, so Liisa decides to try it out herself. She logs into the service with her Facebook account and gives the service permission to use her Facebook information for creating her profile. She is pleased to notice that the service has a channel relating to her gardening hobby. (Liisa has liked different gardening pages in Facebook).

"Based on which information the service recommends me content?", Liisa wonders and notices a link to her profile information. She is interested in seeing what kind of information her profile includes. She can see the interests that have been inferred based on her Facebook account. She notices that her profile includes her interest to herbs, because she reviewed (thumb up) an article relating to this topic earlier in the service. Liisa was earlier very interested in travelling, but because of her current life situation it is not so relevant any more. She removes travelling from her profile and updates her new dancing hobby.

Liisa adds the location of her home, work place and summer cottage on a map. Based on this information, the service will be able to make recommendations and notifications relating to Liisa's meaningful places.

#### **Use Case 2: Controlling notifications**

Liisa notices that she is able to give the service permission to send notifications based on her context and interests. Liisa is a bit afraid of how much advertisement she will get, but decides to try the service. She can see that she can cancel the permission later on, if she decided to do so.

Liisa gives the service the permission to send notifications in the morning and in the afternoon always when there is unusual traffic jams on the way to work or home. Because it is spring, Liisa defines that she wants to get notifications of new content relating to her gardening hobby. She wants these notifications to be sent to her at most once a day.

#### **Use Case 3: Getting notifications**

Liisa is just leaving for home from work, when she receives a notification about traffic jam on the "Kehä 1" road. Liisa decides to stay at work a little bit longer.

Liisa is in the city when she receives a message on her mobile phone. Liisa notices, that she has got notification from the "Just for you"- service. The message contains information about a new "Own kitchen garden"- book which has arrived in the city library, a new Finnish nature TV-series starting the day after tomorrow and Gardening exhibition on the spring. "I will check this up while I'm waiting Leena to arrive to the coffee shop", Liisa decides.

#### **Use Case 4: Viewing recommendations**

Liisa logs into the "Just for you"-service and looks at the recommended content for today. There are especially recommendations about Liisa's hobbies and interests. The service shows content close to Liisa's current location, home, workplace and summer cottage. Liisa can browse announcements, events, stories of neighbourhood, articles and TV-programs.

#### **Use Case 5: Searching content**

Liisa wonders if there is some other nice content about herbs in the service. She types "herbs" into search field and finds articles about growing herbs and about different species of herbs. Liisa is interested in a video that tells about city gardening in Pasila and another one about how to use herbs in cooking fish dishes. Liisa is excited about browsing content.

#### **Use Case 6: Giving feedback**

A couple of articles raised Liisa's interest. She gives positive feedback (thumb up) on these articles. Articles are stored into her favourites so she can find them easily later on.

#### **Use case 7: Utilising the user's social network**

Liisa shares interesting event information to her friend Leena. Liisa is also able to see what kind of content her friends have liked.

Leena decides to check what kind of events will be recommended to her and to her husband. In the "Just for you"-service, Leena is able to connect her own profile with profiles of her friends and members of her family. Leena has earlier connected her profile with her two friends and with her husband. Leena selects combined recommendations for her and her husband.

## **5 Conclusions**

The user study brought up many issues that need to be addressed in order to make the use of portable profile and related recommendation and alert services acceptable and interesting for the users. We summarise here the main things to keep in mind.

Users are very concerned about what information is stored and shared about them and they are worried that by mistake they will share and expose more than they intended. When planning the application and user interfaces, *clarity, understandability and ease of use* must be the guiding principles in all aspects of the application.

The issue of *linking the profile to the real identity* is very important from many points of view. If the real identity is linked to the profile, the requirements for data *security* will be high in the profile service itself and as well as in how the data is transferred between different services and how it is used and stored in different applications.

Even when the real identity is not explicitly expressed and stored in the service, the *anonymity* of the user profile will be weak the more information there is, particularly if there is information about locations and daily routes. Also, including information of the user's social networks, reduces the anonymity. Security issues need to be address carefully even though there would be no official link to real identities.

A simple way of dividing the profile into different levels of security was proposed. The security level deals in particular with the existence of the user's real identity. Data content will be very different in different kind of services: when dealing with authorities, the real identity is needed, but whereas user interests and intentions are in many cases of little relevance. The opposite applies, when dealing with entertainment type services.

Users seem to be willing to *update and correct information* that is stored about them. Knowing about intentions and plans is important for making useful recommendations to users.

Users want to be able to *remove all the data* of themselves out of the service. It was even expressed that the user should be able to remove his or her data also from all those services where the profile has been used.

Users must also have an easy way of *controlling how they receive the recommendations and alerts*. Alerts are very quickly experienced as disturbing and annoying, which can be only avoided by being highly relevant and useful. In a final application, users must be given the chance to choose different delivery channels and frequencies depending on the type of information. The choice of information delivery may also apply to the order of how information is presented: the user need not wait for the alert regarding an emergency, but may check the related services, if he or she realises that he or she needs some services.

*Many potential topics for recommendations* or notifications from holiday destinations to application and jobs came up and were indicated as interesting by the users. Municipality, event service and location based service providers were identified by many as parties to whom users would be ready to share their profile for personalised services. From users point of view, various types of official data sources, like municipality or Kela, who make decisions that affect the user and his or her daily environment, but which the user does not have time and interest to follow up regularly, could be useful sources for an alerting/ recommendation service. In order to make a successful personalised recommendation / alerting service, it is necessary to identify both content / information that the user is interested to follow using his or her profile, and the user must also trust the service provider enough to give his or her profile to the service.

Another service opportunity may be to summarise the content in recommendations in order to make it efficient for the user to keep up with a certain topic. Being able to gather and filter information from several sources in another opportunity to add value to the user.

A common worry that was expressed also in this user study is that people are *afraid of getting a too narrow view* of the world, if they follow things via personalised recommendations. When offering services, it is good to offer alternative views or approaches for finding material and information. Recommendations from friends are currently very important as a source of recommendations. From the recommendation service point of view, it is important to make it easy for users to forward recommendations to their contacts and networks.



## Appendixes

### Appendix 1: Discussion topics and user stories

#### **K1: Samojen verkkotunnusten käyttö / Using the same ID when logging into different services**

Joihinkin verkkopalveluihin voi kirjautua samoilla käyttäjätunnuksilla, jotka ovat käytössä jossakin toisessa palvelussa. Esimerkiksi Facebookin, Googlen ja Yahoos käyttäjätunnuksilla voi kirjautua useisiin muihin verkkopalveluihin ilman, että niihin tarvitsee rekisteröityä erikseen. Käyttäjätietosi (esim. nimi ja kuva) siirtyvät tällöin automaattisesti uuden verkkopalvelun käyttöön.

**Oletko käyttänyt esim. Facebookin tai Googlen käyttäjätunnuksia kirjautuessasi muihin palveluun? Miten suhtaudut tietojen siirtämiseen eri verkkopalvelujen välillä?**

Vastauksia yhteensä 26

Samojen käyttäjätunnusten käyttäminen helpottaa elämää. 46%

Suhtaudun epäilevästi tietojen siirtoon palvelujen välillä. 42%

En mieti koko asiaa. 4%

Minulla ei ole kokemusta asiasta. 8%

It is possible to log into different services using the same user ID and password. For example, Facebook, Google and Yahoo Ids can be used to log into different services without needing a separate registration. When using these IDs, your user information (e.g. name and photo) are transferred automatically to be used by a another service.

**Have you used for example Facebook or Google ID to log into other services? How do you feel about transferring data between services?**

Total number of answers: 26

Using the same user name and password makes life easier 46%

I'm hesitant about transferring data from one service to another 42%

I do not think about it. 4%

I do not have any experience about it. 8%

## K2: Siirrettävä profiili / Portable profile

Siirrettävä profiili tarkoittaa sellaista kuvausta omista kiinnostuksesi kohteista, jota voi käyttää useassa palvelussa. Profiilin avulla verkkopalvelut pystyvät tarjoamaan juuri sinua kiinnostavaa sisältöä ilman, että sinun täytyy kertoa itseäsi koskevia tietoja uudestaan ja uudestaan. Profiiliin kertyy tietoa käytön myötä myös lisää, ja näin siitä tulee monipuolisempi ja se kuvastaa kiinnostuksesi kohteista entistä paremmin. Pystyt kuitenkin itse valitsemaan, mitä tietoja profiiliin talletetaan, ja voit lisätä niitä itsekin, jos automaattisesti kertyneet tiedot eivät kuvaa riittävästi kiinnostuksen kohteitasi.

Jos olet esimerkiksi kerännyt pyöräilyyn liittyviä linkkejä kirjanmerkkipalveluun ja käytät samaa siirrettävää profiilia aikakauslehden verkkosivuilla, näet siellä automaattisesti pyöräilyyn liittyviä artikkeleita.

### **Missä tilanteissa siirrettävästä profiilista olisi hyötyä? Arveluttaako sen käytössä jokin asia?**

Vastauksia yhteensä 19

Tämä tuntuu hyödylliseltä. 47%

Tämä arveluttaa minua. 47%

Voisin käyttää tällaista palvelua. 21%

Portable profile refers to such a description about your interests that can be used in several services. With the help of the profile, web based services can offer content that is of interest to you without you needing to tell information about yourself over and over again. When used, more information can be accumulated into the profile, and this make the profile more versatile and it will reflect your interests even better. You can however choose by yourself what data will be stored in the profile, and you can add more information yourself, if the automatically generated information does not reflect your interests well enough.

For example, if you have gathered links to cycling to a social bookmarking site and you use the same profile when visiting a magazine website, you will be recommended cycling related articles there.

### **In which occasions would the portable profile be useful? Is there something about using it that makes you hesitant?**

Total number of answers: 19

This feels useful. 47%

I am hesitant about this. 47%

I could use a service like this. 21%

### **K3: Profiilin luominen ja hallinta / Creating and managing the profile**

Miltä tuntuisi ajatus itse ylläpitää ja hallita omaa profiiliäsi? Nykyisin verkon käyttäjistä kerätään ja kertyy paljon tietoa ilman että käyttäjä sitä tiedostaa. Olisitko kiinnostunut näkemään ja muokkaamaan sinusta kerättyjä tietoja? Olisitko valmis hyödyntämään eri palveluissa syntyneitä tietoja yhden monissa palveluissa käytettävän profiilin muodostamiseksi?

*Mitkä alla olevista vaihtoehdoista kiinnostaisivat sinua profiilin luomisessa? Kerro miten muuten haluaisit luoda ja hallita profiiliäsi, ja mistä sosiaalisen median palveluista haluaisit siirtää omia tietojasi profiilin osaksi.*

Vastauksia yhteensä 13

Sosiaalisen median palvelujen pohjalta esimerkiksi hyödyntäen Facebook-profiilia 69%

Automaattisesti päivittäen sen mukaan mitä ilmaisen omista kiinnostuksistani eri palveluissa (peukutukset, kommentit, ..) 54%

Automaattisesti päivittäen verkkohistoriani mukana (selaus, haut, ...) 15%

Lisäämällä itse tietoja suunnitelmistani ja kiinnostuksen kohteistani 62%

Antamalla selaimeni kirjanmerkit analysoitavaksi 8%

Lisäämällä kartalle tietoja itseäni kiinnostavista paikoista kuten asuinpaikastani, työpaikan sijainnista, kesämökistä 23%

Tallentamalla GPS-paikannuksen avulla vakiokulkureittini 23%

Antamalla sovelluksen seurata reaaliaikaisesti sijaintiani 8%

How do you feel about the idea of creating and maintaining your profile by yourself? Currently, a lot of information is collected and accumulated of web users without the user being aware of it. Would you be interested in seeing and modifying that data that is being gathered about you? Would you be ready to utilise the data that has been accumulated out of many services to create one portable profile that can be used in many services?

*Which of the alternatives listed below would interest you when creating the profile? Tell, how you would like to create and manage your profile, and from which social media services would you like to transfer data to be part of your profile?*

Total number of answers: 13

From social media services, such as from Facebook profile 69%

With the help of automatic updates based on what I express of my interests in different services (likes, comments, ..) 54%

With the help of automatic updates based on my web history (browsing, searches, ...) 15%

By adding myself information of my plans and interests 62%

By giving my bookmarks for analysis 8%

By adding on a map locations that interest me, such as where I like, where my working place is, summer cottage 23%

By storing my routine routes using GPS 23%

By letting an application follow and register my location 8%

#### **K4: Profiilin tiedot / Profile data content**

Profiili voi pitää sisällään erilaisia tietoja käyttäjistä: perustiedot kuten ikä, sukupuoli ja perhetilanne, kiinnostuksenkohteet, arvot, suunnitelmat, tärkeät paikat (asuinpaikka, työpaikka, mökki) ja sosiaalinen verkosto (ystävät, perhe, työkaverit).

Mitä tietoja olisit valmis jakamaan itsestäsi eri palveluille ja mitä et? Haluaisitko pystyä valitsemaan minkä osan profiilistasi jakaisit eri palveluihin? Haluatko että siirrettävä profiili linkittyy todelliseen identiteettiisi vai haluaisitko pitää sen anonyyminä?

The profile may include different kind of information about the user: basic information such as age, gender and family, interests, values, plans, important locations (home, job, cottage) and social networks (friends, family, colleagues).

What data would you be ready to share about yourself to different services, and what not?

Would you like to choose which part of the profile you would share with different services? Would you like your real identity to be linked to your profile or would you like to keep it anonymous?

#### **K5: Siirrettävän profiilin käyttäminen eri palveluissa / Using the profile in different services**

Siirrettävän profiilin ideana on, että samaa profiilia voi hyödyntää erilaisissa palveluissa ja myös erilaisilla päätelaitteilla kuten kännykkä, tablet, PC ja TV. **Millaisiin palveluihin olisit valmis jakamaan profiilisi, niin että palvelua voitaisiin personoida vastaamaan kiinnostuksesi kohteita? Millaisissa palveluissa koet, että suositteluista olisi sinulle hyötyä?**

Rastita alla olevista vaihtoehdoista sopivat ja kirjoita muita palveluja kommentteihin.

Vastauksia yhteensä 13

Aikakauslehtityyppistä sisältöä tarjoava sivusto 15%

Televisio-ohjelmien suosittelupalvelu (esim. Skimm.tv) 38%

Lähialueen sisältövideopalvelu (esim. Stadi.tv) 23%

Kaupunginpalvelut 62%

Sijainnin ja kiinnostuksen mukaiset automaattiset mainospalvelut 8%

Sijainnin ja kiinnostuksen mukaiset automaattiset tiedotteet 46%

Tapahtumapalvelu 54%

Uutissivusto 38%

Verkkokauppa 31%

Verkkomatkatuimisto 8%

En mihinkään 23%

Minulla ei ole kokemusta asiasta. 8%

The idea with the portable profile is that the same profile can be used in different services and using different terminals like mobile phone, tablet, OC and TV.

**Which services would you be ready to share your profile with so that the service could be personalised to match your interests? In what type of services do you experience that recommendations would be useful to you?**

Mark which of the options below would be suitable and write additional services into the comments.

Total number of answers: 13

Website with magazine type of content 15%

Recommendation service for TV programmes (e.g. Skimm.tv) 38%

Video service with videos from nearby locations (e.g. Stadi.tv) 23%

Services provided by the municipality 62%

Automatic advertisement service offering location and interest based advertisement 8 %

Location and interest based notification service 46%

Event service 54%

News site 38%

Online store 31%

Online travelling agency 8%

Nowhere 23%

#### **K6: Automaattisuositukset ja muistutukset / Automatic recommendations and notifications**

Kiinnostusprofiilisi perusteella kännykkä voisi myös aktiivisesti muistuttaa asioista, jotka sinua voisivat tietyllä hetkellä kiinnostaa tai olla sinulle hyödyllisiä.

Esimerkiksi työmatkalla junassa kännykkä voisi piipata ja kertoa, että tänään illalla tulee televisiosta dokumentti suosikkilaulajastasi. Tai ehdottaa sinulle poikkeuksellista kulkureittiä työpaikalle valtiovierailun aiheuttamien liikennejärjestelyjen johdosta.

#### **Mieti, millaisessa tilanteessa olisit kaivannut automaattiviestin sinua mahdollisesti kiinnostavasta asiasta?**

Vastauksia yhteensä 16

Kiinnostavan TV-ohjelman alkaminen 38%

Kiinnostavan tapahtuman lipunmyynnin aukeaminen 50%

Omalla työmatkalla oleva liikenneuhka 44%

Suosikkikirjailijani uutuusteos 31%

Lähialueeni kaavaehdotuksen valmistuminen 44%

Ilmanlaatutiedotteet 25%

En haluaisi hälyytyksiä mistään yllä mainituista 25%

Based on your interest profile, your mobile phone could actively remind you of things that might interest you on a certain moment or be useful to you. For example, during your trip from work to home by train, your phone could peek and tell you that tonight there will be a documentary on TV about your favourite singer. Or suggest that you take an alternative route to work because some of the streets on your routine route are blocked because of a state visit.

**Think of in what kind of situations you would have wanted to get an automatic message about an item that interests you?**

The total number of answers: 16

When an interesting TV programme starts 38%

When ticket sale of an interesting event is opened 50%

There is a traffic jam on the route between home and job 44%

A new book is published by my favourite author 31%

Urban plan for my home area is ready 44%

Notification of air quality 25%

I would not like to get notifications of any of the above mentioned topics 25%

**K7: Täydentävän tiedon suosittelu tv-ohjelmien yhteydessä / Recommending compelling information in connection to TV programmes**

Olisitko kiinnostunut saamaan täydentävää tietoa katsomaasi tv-ohjelmaan liittyen? Haluaisitko saada tietoa ennen ohjelmaa, sen aikana vai sen jälkeen? Olisitko kiinnostunut keskustelemaan ohjelmasta joko ystäväsi, koko ohjelmaa seuraavan yleisön tai ohjelman tekijöiden kanssa? Tulisiko välitettävän tiedon olla personoitua vai riittäisikö kaikille katsojille jaettava yhteinen sisältö?

*Alla on listattu joitakin vaihtoehtoja, mutta mieti myös muita mahdollisia tilanteita, joissa täydentävästä ja mahdollisesti personoidusta tiedosta voisi olla hyötyä. Alla on myös muutama toteamus liittyen tapaan, jolla tiedon tulisi olla tarjolla.*

Vastauksia yhteensä 9

Olisin kiinnostunut saamaan ajankohtaiset kuvaukset joukkueista ennen ottelun alkua (esim. Jääkiekko-ottelu) 44%

Olisin kiinnostunut saamaan kaverieni viestejä ja/tai keskustelemaan heidän kanssaan seurattessani viihde-ohjelmaa (esim. Putousta) 56%

Olisin kiinnostunut samaan uutisia täydentäviä tietoja / linkkejä uutislähetysten aikana. 67%

Olisin kiinnostunut saamaan lisää tietoa aiheesta, jota juuri päättynyt dokumentti- /asiaohjelma käsitteli (esim Avara luonto). 67%

Olisin kiinnostunut ainakin joistakin lisätiedoista / interaktiivisuudesta, jos ne tulisivat suoraan televisioruudulleni. 67%

Olisin kiinnostunut ainakin joistakin lisätiedoista / interaktiivisuudesta, jos saisin sen puhelimeeni tai tablet- tai kannettavalle tietokoneelle. 56%

Minulle riittäisi yleisesti täydentävä tieto ilman henkilökohtaista profilointia. 44%

Toivoisin tiedon jäsentämistä / suosittelua oman profiilini perusteella. 44%

Would you be interested to get complementing information to the TV programme that you are watching? Would you like to get it before, during or after the programme? Would you be interested in discussing the programme with your friends, with all who are watching the programme or with the makers of the programme? Should this information be personalised or would it be enough to have one material to be shared with everyone?

*Below some alternatives are listed, but think also of other possible occasions where complementing and possible personalised information could be beneficial. Below, there are also some statements relating to the way that the information should be available.*

The number of answers: 9

I would be interested in getting current description of teams before the beginning of the game (e.g. ice hockey game). 44%

I would be interested in getting messages from my friends and/or to discuss with my friends while watching entertainment (e.g. Putous). 56%

During news broadcasting I would be interested in getting additional information / links about the topics relating to news. 67%

I would be interested in getting more information about the topics that were handled in just finished documentary (e.g. Avara luonto). 67%



I would be interested in some additional information / interactivity, if it would be available on my TV-screen. 67%

I would be interested in some additional information / interactivity, if I would get it on my mobile phone or tablet or laptop. 56%

General additional information without personalisation would be enough for me. 44%

I wish to have additional information recommended and sorted based on my profile. 44%

### **T1: Tulva kesämökillä / Flood at the summer cottage**

Jukka on työmatkalla Saksassa, kun hänen kännykkäänsä tulee viesti, että kesämökin alueelle on iskenyt tulva. Jukka huolestuu asiasta ja miettii mitä hän pystyy ja ehtii täältä käsin asialle tekemään. Huojentuneena hän huomaa, että viestin mukana on tullut tietoa palveluntarjoajista, jotka voivat häntä asiassa auttaa. Jukka soittaa palveluntarjoajalle ja saa sovittua, että palveluntarjoaja käy tarkistamassa tilanteen ja aloittaa tarvittavat toimenpiteet vahinkojen minimoimiseksi. Jukka voi rauhallisin mielin keskittyä töihinsä.

#### **Mitä ajatuksia tarina herätti?**

Vastauksia yhteensä 26

Palvelu vaikuttaa kiinnostavalta 35%

Palvelu vaikuttaa hyödylliseltä 58%

Pidän palvelua turhana itselleni 27%

Jukka is on a business trip in Germany when he gets a message to his mobile that his summer cottage has been hit by a flood. Jukka is worried about the matter and wonders what he can do about the thing being so far away. He is relieved to notice that the message also includes information about service providers who can help him in the matter. Jukka calls a service provider and makes an agreement that the service provider goes and checks the situation and takes the first steps to minimise the damage. Jukka can now concentrate on his work with a calm state of mind.

#### **Which thoughts did this story raise in you?**

The number of answers in total: 26

The service seems interesting 35%

The service seems useful 58%

I consider the service useless for me 27%

## T2: Suositellut työmatkan varrelta / Recommendations for commuters

Liisa päättää kokeilla suositusmediapalvelun mahdollisuutta oman liikkumisprofiilin tallentamiseen. Töihin lähtiessään hän laittaa GPS-paikannuksen päälle ja perille päästyään tallentaa reitin profiilipalveluun ja kertoo sen liittyvän työmatkaan. Myöhemmin iltapäivällä hän tallentaa reitin kotoa tanssiharrastukseensa ja merkitsee sen vapaa-aikaan liittyväksi.

Suositusmediapalvelusta Liisa voi sitten selata lähellä reittiä olevia palveluja, tapahtumia, uutisia ja kaupungin osien tarinoita. Esille on nostettu erityisesti Liisan harrastuksiin ja kiinnostuksiin liittyviä aiheita.

Seuraavana päivänä ajaessaan töihin Liisa saa kännykkäänsä viestin, että matkan varrella olevassa marketissa on kala tarjouksessa ja läheisellä kuntoklubilla on avoimet ovet viikonloppuna. Hän päättää kotimatalla käydä ostamassa perheelle kalaa ruoaksi ja kokeilla suosituspalvelun ehdottamaa yrttikalareseptiä. Viikonloppu on jo valitettavasti buukattu, eikä Liisa ehdi lähteä tutustumaan kuntoklubin tarjontaan. ”Enpä tiennyt tuosta paikasta ennen, täytyypä pitää mielessä”, Liisa ajattelee.

Liisa on juuri lähdössä kotiin, kun kännykkään tulee viesti, että Kehä 1:sen liikenne ruuhkautuu onnettomuuden vuoksi. Liisa päättää jäädä vielä hetkeksi töihin, jotta pahin ruuhka ehtii purkautumaan.

### Mitä ajatuksia tarina herätti?

Vastauksia yhteensä 21

Palvelu vaikuttaa kiinnostavalta 33%

Palvelu vaikuttaa hyödylliseltä 38%

Pidän palvelua turhana itselleni 48%

Liisa decides to test the option of storing one's route profile in the recommendation service. When she leaves for work she switches on the GPS location recorder and when she gets to the office, she stores the route in the profile service and describes it as her route to work. Later in the afternoon she stores a route from home to the place where she practices dancing and marks it as leisure time related.

Now she can browse services, events, news and stories close to her route in the recommendation service. The service puts emphasis on items that have a

connection to her hobbies and interests.

The next day, when Liisa is driving to work, she gets a message on her phone telling that there is fish on special offer in a super market located on her route and that a closely located gym and open door the coming weekend. She decides to stop in the supermarket and buy the fish to make a dinner for the family and to test the herb fish recipe that the recommendation service is proposing. Unfortunately her calendar is fully booked for the weekend, so she has no time to check the offerings of the gym. "I did not know about that place, I must keep it in mind", Liisa thinks.

Liisa is just about leaving for home when she receives a message telling that there is a traffic jam on Kehä I because of a car accident. She decides to stay a moment longer at the office, so that the traffic has time to ease down a bit.

### **Which thoughts did this story raise in you?**

The total number of answers 21

The service seems interesting 33%

The service seems useful 38%

I consider the service useless for me 48%

### **T3: Vinkkejä arjen iloksi / Tips for everyday life**

Leena on 37-vuotias kolmen lapsen äiti. Hän asuu miehensä, 6-vuotiaan pojan ja 4-vuotiaiden kaksostytöjen kanssa Kirkkonummella hiukan ahtaassa rivitalohuoneistossa. Leena kulkee työmatkat junalla päivittäin Helsingin keskustaan.

Leena on kiinnostunut kodin sisustamisesta. Isoja remontteja tai huonekaluostoksia ei ole varaa tehdä kovin usein, mutta pieniä muutoksia hän tekee usein, sillä lasten kasvun myötä tarpeet kodin tilojen käytölle muuttuvat jatkuvasti. Sisustuslehtien kuvat ovat hänelle mieleistä katseltavaa. Hän hakee niistä ideoita sekä perussisustusratkaisuihin että kovin viihtyisyyden parantamiseen. Joskus hän tekee näkemiensä ideoiden perustella ostoksia, mutta useimmiten ne toimivat alkusysäyksen antajina omalle ideoinnille.

On kylmä, talvinen helmikuun päivä ja Leena istuu junassa matkalla Helsingin keskustaan. Onneksi mies toi hänet asemalle ennen kuin suuntasi työmatkalle Turkuun, joten Leenan ei tarvinnut kävellä ulkona pakkasessa. Junakin on aikataulussa pakkasesta huolimatta. Viime viikolla Leena oli käynyt esikoisen kanssa ilmoittautumassa kouluun, ja nyt Leenaa kiinnostaa, miten pojan huonetta saisi muokattua niin, että siitä tulisi koululaisen huone.

Leena avaa “Juuri sinulle” -palvelun ja sen osion sisustus. Leena ei jaksaa alkaa miettiä hakusanoja vaan katsoo suoraan suositusvalikkoo. Leena on aiemmin kertonut palvelulle perheensä koon ja lasten iät, sekä minkä kokoisessa asunnossa perhe asuu. Tämän perusteella palvelu esittää seuraavat vaihtoehdot aihepiirin osalta: kodin kaunistus, tilankäyttö, koululaiset, pikkulapset. Leena valitsee koululaiset ja alkaa selailla kuvia erilaisista koululaisten huoneista ja työtiloista. Pari kuvaa herättää Leenan mielenkiinnon. Hän ”peukuttaa” nämä kuvat voidakseen helposti palata niihin myöhemmin ja lukea myös artikkelit, joihin nämä kuvat liittyivät.

#### **Mitä ajatuksia tarina herätti?**

Vastauksia yhteensä 21

Palvelu vaikuttaa kiinnostavalta 38%

Palvelu vaikuttaa hyödylliseltä 29%

Pidän palvelua turhana itselleni 52%

Leena is a 37 years old mother of three. She lives together with her husband, a six years old son and 4 years old twin daughters in a bit too small terraced house flat in Kirkkonummi. She commutes daily by train to work at the centre of Helsinki.

Leena is interested in decorating the house. She cannot afford making big remodelling or buying new furniture often, but she makes small changes often, because as the children grow, the needs for using the available space change continuously. She likes to look at the photos in furnishing magazines. She looks at them in order to find new ideas both the basic things and how to make the home more comfortable. Sometimes, she buys something as shown in magazines, but most often, the photos make her start generate new ideas by herself.

It is a cold morning in February and Leena is sitting in the train on her way to the centre of Helsinki. She was lucky to have her husband to take her to the train station before he headed for a business trip to Turku, so she did not walk out in the cold weather. Even the train is on time despite the cold weather. Last week Leena had been to school with her first born to register him to the school, and how she is interested in how to modify the son's room to make it a pupil's room.

Leena checks the “Just for you” service and its section of furnishing. Leena is too lazy to think of search terms and looks directly at the recommendations menu. Leena has earlier told the service the size of her family and the children's ages and in how large a flat they live. Based on this information, the service proposes the following access options to the topic: home decoration, how to use space effectively, schoolchildren, small children. Leena selects schoolchildren and starts to browse photos of schoolchildren's rooms and

spaces. A couple of photos raise her interest. She “thumbs them up” in order to be able to come back easily to them later and also to read the articles from which these photos are from.

**Which thoughts did this story raise in you?**

The total number of answers 21

The service seems interesting 38%

The service seems useful 29%

I consider the service useless for me 52%

**T4: Tekemistä viikonlopuksi / Suggestions for the weekend**

On torstai-iltapäivä, ja työpäivä on lopussa. Leena on kävelemässä kohti rautatieasemaa ja tuntee, kun kännykkä värähtää kevyesti. Hän tietää, että tähän aikaan arkisin tulee aina televisio-ohjelmasuositus, joten hän ei pysähdy tutkimaan kännykkää vaan tarkistaa suosituksen vasta kun pääsee junaan. Ohjelmasuositus ehdottaa illalla tulevaa Kuningaskuluttaja-ohjelmaa. Leena lukaisee ohjelmatiedot ja huomaa, että siellä on aiheena laskettelulasien vertailu. ”Ehkä tuon voisi katsoa”, Leena ajattelee ja klikkaa kellon kuvaa, mikä tarkoittaa, että kännykkä muistuttaa ohjelman alkamisesta myöhemmin illalla. Ohjelma kiinnostaa häntä, koska koko perhe on lähdössä muutaman viikon kuluttua hiihtolomalle Häkärinteiden laskettelukeskukseen. Leena ja hänen miehensä haluavat opettaa yhteisen mieliharrastuksensa myös lapsille.

Leena muistaa, että isovanhemmat tarjoutuivat alkuviikosta ottamaan lapset viikonloppukylään, mutta asiaa ei ole vielä sovittu. Leena päättää katsoa, onko lähialueella jotain erityistä tapahtumassa tulevana viikonloppuna. Tapahtumasuosituksat näyttävät vaihtoehdot hänen omien mieltymystensä pohjalta. Leena valitsee suosituksat itselle ja miehelleen. Ensimmäisenä listalla on teatteriesitys, joka perustuu Peter Franzénin esikoisromaniin. Leena huomaa, että tarjolla on lisää tietoja Franzénista. Kaikki kirjat näyttäjät olevan lainassa, joten Leena jättää varauksen kirjasta. Onneksi palvelun kautta pääsee lukemaan aikakauslehdissä olleita Peter Franzenin haastatteluita.

**Mitä ajatuksia tarina herätti?**

Vastauksia yhteensä 21

Palvelu vaikuttaa kiinnostavalta 43%

Palvelu vaikuttaa hyödylliseltä 33%

Pidän palvelua turhana itselleni 52%

It is Thursday afternoon and the working day is over. Leena is walking

towards the railway station and feels that her mobile vibrates lightly. She knows that this is the time of a working day when a TV programme recommendation comes, so she does not stop to check it immediately. Instead she checks it after she has got into the train. The programme recommendation service recommends to her tonight's episode of "The consumer is the king" programme. Leena checks the programme description and notices that a comparison of slalom glasses will be presented. "I might take a look at that", Leena thinks and clicks on a clock icon, which means that her mobile will notify her when the programme starts later in the evening. The programme interests her because the whole family of going for a skiing holiday in a couple of weeks to Häkärinne slalom hill. Leena and her husband want to teach their children their favourite hobby.

Leena remembers that earlier this week the grandparents offered to take the children for the weekend, but no final decision was made about this yet. Leena decides to check if there is something special taking place the coming weekend. The event recommendations show the options matching her interests. Leena chooses the recommendations for her and her husband. The first item on the list is theatre based on Peter Franzén's first novel. Leena notices that more information is available on Peter Franzén. All the books in the library seem to be out, so Leena makes a reservation. Luckily the service gives access to interviews of Peter Franzén that have been published in magazines.

**Which thoughts did this story raise in you?**

The total number of answers 21

The service seems interesting 43%

The service seems useful 33%

I consider the service useless for me 52%

## Appendix 2: User submitted ideas

ID	The title in Finnish	The title in English
D1	Kirjan ISBN-skanneri- oma kirjahylly näkösalille puhelimeen	ISBN scanner for books – own bookshelf always on the mobile
D2	Työpaikkasuositteija	Job recommender
D3	Terveysvahti - kertoo teille reaaliaikaiseen paikkaanne liittyen mikäli teitä uhkaa jokin ilmiö	Location based, personalised health watch dog
D4	Sovellussuositteija: 1000 in 1 - sovellus.	Application recommender: 1000 in 1
D5	Virallinen suositus	Official recommendation
D6	Noppasofta	Dice software
D7	Joululahjaskanneri	Scanner for Christmas presents
D8	Tuoteselosteinfo	Product information
D9	Keihäsmatkat 2.0	Travel agency 2.0
D10	Mediasisällön arviointisovellus	Evaluation application for media content
D11	Perustuslailliset oikeudet jokaisen vanhenevan ihmisen työrukkasiksi	Constitutional right to the tool of an elderly person
D12	Kauppan varastosaldosovellus	Shop storage status application
D13	Ostosuunnitelmat – halytys, kun tuote tarjouksessa / ostettavissa tiettyyn hintaan	Shopping plans – special offer/ price limit watch dog
D14	Kauppalistavahti	Location based shopping list watch dog
D15	Hyvinvointi- ja terveystalvelujen käyttö	Using wellbeing and health services
D16	Sovellus jolla saisi siivottua omaa henkilöytään koskevat asiat netistä	An application for cleaning up online information of one's own identity
D17	Laajennettu sovellus koskemaan koko Eurooppaa temasta 'Suosittelet työmatkan varrelta'	Expanded T2 (Recommendations for commuters) to include all of Europe