

# Elderly as content providers in their everyday life supporting services

*Mirja Kälviäinen*

*mirja.kalviainen@pkamk.fi*

*Sirkkalantie 12 A, 80200 Joensuu, Finland*

## Abstract

This paper describes the research and service development activities in Finland for the EU ICT PSP Life 2.0 project running years 2010-2013. This European Smart Cities project aims at generating new social opportunities providing services and activities for elderly people. The user research and piloting are conducted in Denmark, Finland, Italy and Spain. The piloting will lead to solutions for new services and infrastructures that public authorities will be able to develop in collaboration with external business applying the idea of elderly themselves as active content providers. The Finnish contribution describes the elderly everyday life, interactions and service needs in the sparsely populated Northern areas of Europe. The ethnographic research results in Finland described the following elderly everyday life related story themes: social and physical health, healthy and enjoyable food, unexpected home care and ICT tasks, special skills – wanting to help others, spontaneous social trips, changes in life situations, expelling darkness and spotting the nature freaks. These themes and their real life stories served as the material for user personas and service solution scenarios as answers for elderly real life challenges. Through this user driven approach it has been possible to ground many of the scenario solutions in actions where the elderly themselves provide content and help required.

**KEYWORDS:** elderly users, social networks, peer to peer help, UMC, service platform

## Introduction

The proportion of elderly people in Western countries is increasing forcing governments to consider strategies to support independent elderly living. Due to this demographic change there has been growing interest in investigating the elderly themselves as active content providers for their own everyday life supporting services. Elderly can, instead of a burden, be seen as resource. The question is how are we able to activate this resource?

The research and development described in this paper is part of European service design collaboration in the Life 2.0 EU ICT PSP project 2010-2013. This European Smart Cities project aims at creating ICT based social interaction and geographical positioning services to support independently living elderly. The purpose in this innovation project is to enter the marketplace with services as a straight continuation of the project so that the focus of the research and development has been the current everyday life and ICT capabilities of the elderly. The proposition is to include elderly as content providers and public authorities as the platform co-exploiters in collaboration with external business. The design process focuses on generating user driven services and piloting across Europe in Alborg, Denmark, Joensuu, Finland, Milan, Italy and Barcelona, Spain.

In the technology based solution the approach has been socio-cultural appropriating the ethnographically inspired methods (Salvador et al. 1999) in order to gain in-depth and multi-layered insight into the elderly everyday activities and social interactions. The methods included diary based self-documentation, observations and interviews mapping the elderly everyday interactions and needs for support or help. The total of 120 elderly and their social circles were studied in the pilot cities in the beginning of 2011. Active ageing where various types of socialisation are essential proved to be important. The results further showed that the elderly do not use ICT for the sake of passing time but for worthwhile activities related to their interests and hobbies or help and socialising. The elderly hold the continuation of independent life as vital for the quality of life.



Figure 1 an example of the observational research in Joensuu: an elderly lady organising her timetable during her coffee break.

## Research results from Joensuu, Finland

An in-depth ethnographic research from Joensuu area Finland describes the elderly everyday life, interactions, support and service needs and ICT use situation in the Northern European sparsely populated areas. The Joensuu elderly research participants were recruited through Eläkeliitto (retired peoples' union) and they were active Eläkeliitto members aged 65-76 living in the Joensuu sparsely populated and wide area. A diary method was used for the deep user information acquisition due to the long distances and for ensuring realistic information of the everyday interactions. Also participants living environment and equipment were documented. This data collection process was carried out during two months in the beginning of the year 2011 with 8 elderly documenting a week of their life.

The senior user information was supplemented with the city senior service providers' and seniors' ICT guidance peoples' interviews.

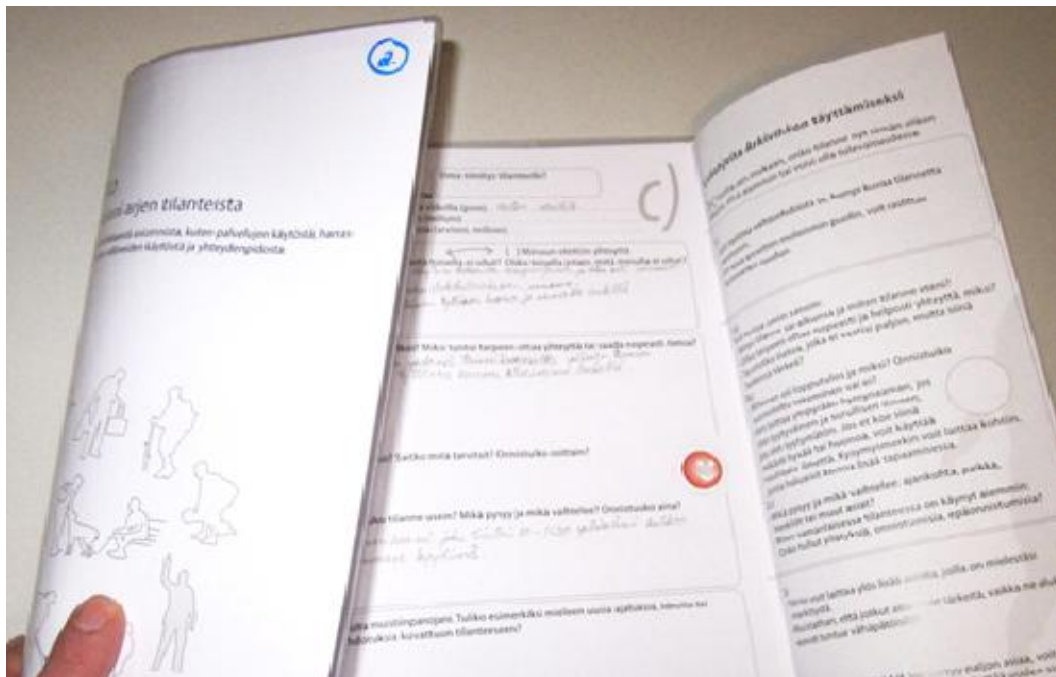


Figure 2 show the Joensuu self-documentation diary explaining everyday situations of needing help or support, helping others or interacting with others. It included information about self, social networks, technology help needs and feeling expressed with mood stickers.

The climate conditions in the Joensuu region are defined by the change of distinctive seasons: winter, spring, summer and autumn including temperature differences between wintertime -30 C to + 30 C during summer. Winters provide a heavy snow cover making moving and transportation difficult adding to the effects of winter darkness. The changing climate affects people, they activity and hobbies in personal ways.

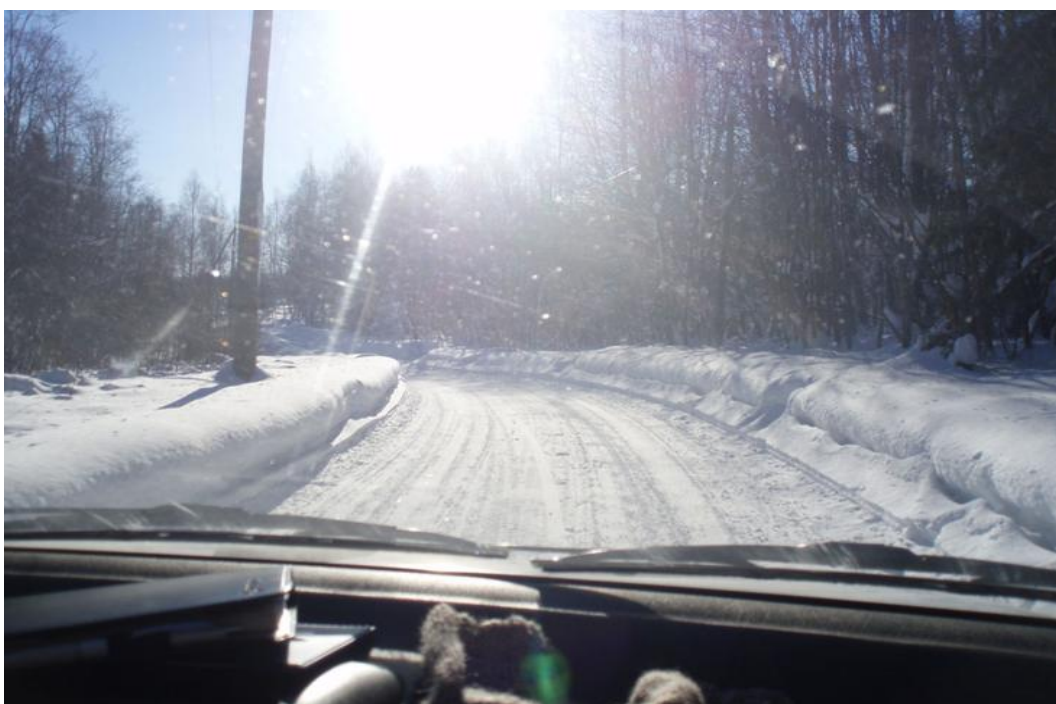


Figure 3 represents an elderly home road covered with snow during the wintertime.

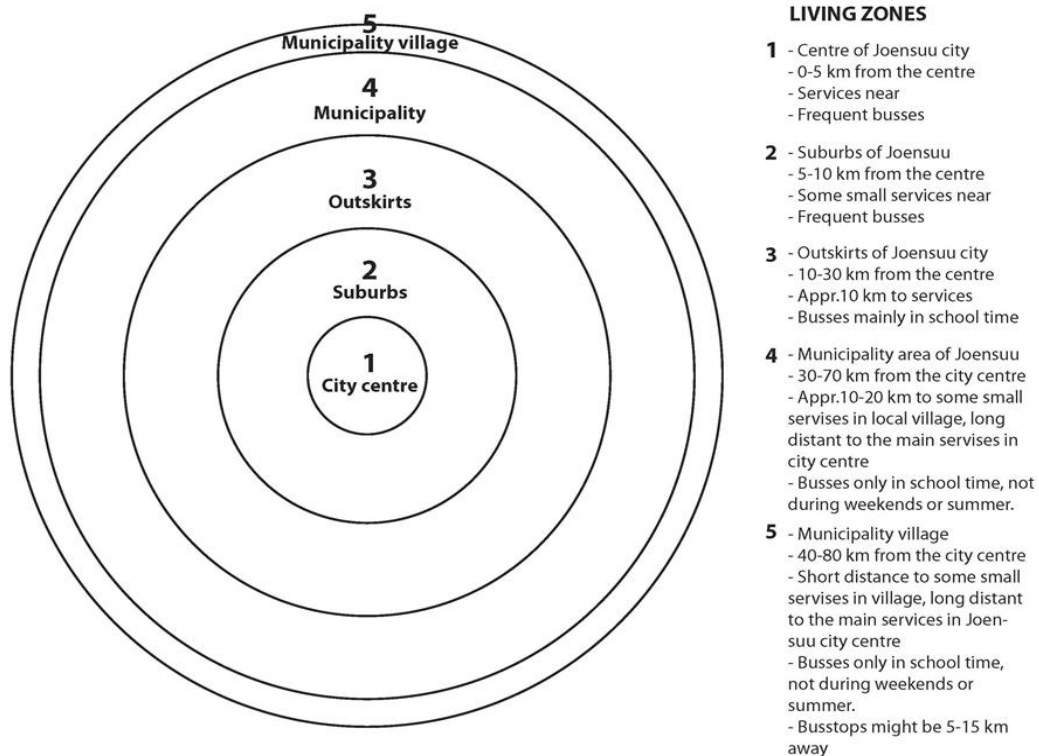


Figure 4 shows a zone map describing the different Joensuu city living zones that clarify the elderly participants living conditions. Both in the ethnographic research and in the following pilot there are participants from these different living zones.

The analysis from the 8 diary cases showed how elderly in the Joensuu district lived in a varied interaction conditions according to the housing form and distance to the service centres. The participants' documentation concentrated on the research time running winter season as the winter conditions provided a lot of interesting situations and service needs. The summer, spring and autumn with lot of time spent in the summer houses and nature could still bring out different situations with opportunities for interactions and services.

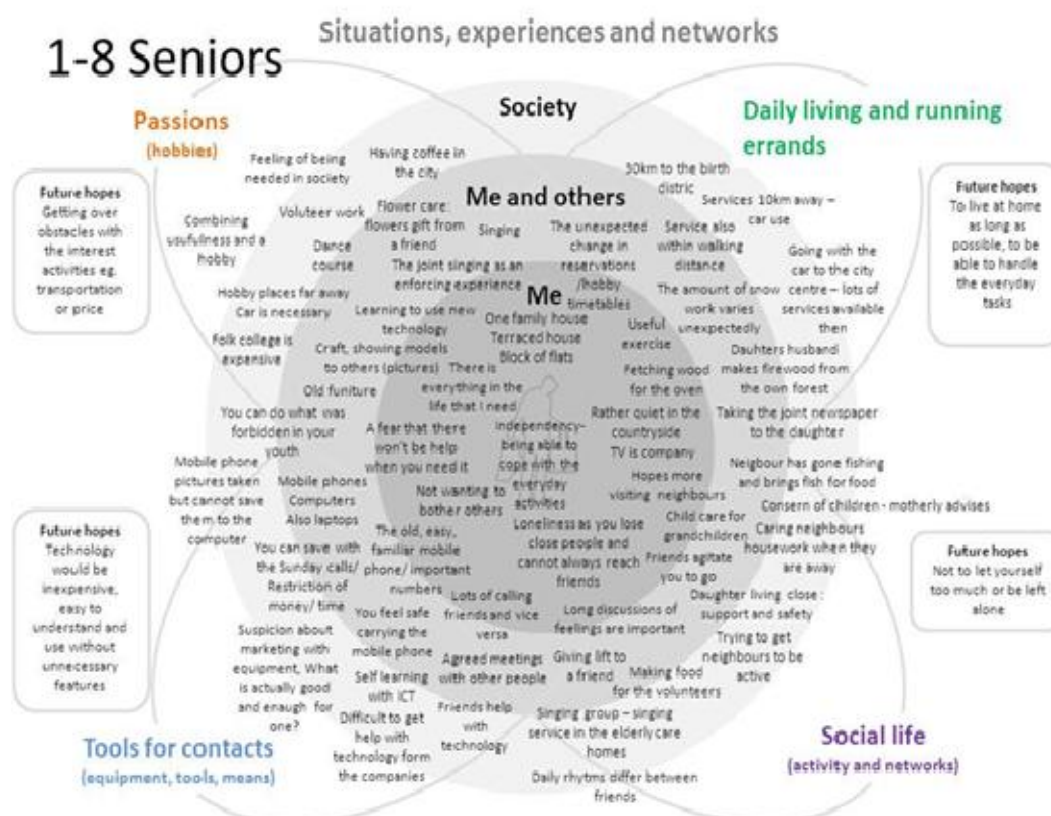


Figure 5 represents the map showing main highlights and interesting service and interaction opportunities analysed from the Joensuu material.

## User stories as service possibilities

The across Europe agreed final analysis of the ethnographic research was to provide user stories analysed from the everyday interaction data. A final analysis also from the Joensuu material provided real life user stories and further provided wider service themes above the stories. The story gathering was done to stress impregnated factors and accumulated stories in the discussions between different users and researchers.

Name of the story	Expelling darkness – daring to contact others
Short narrative	<p>A lady 72 years old. You do not always want to bother other seniors or your acquaintances</p> <p>Many of her acquaintances and relatives help her often and answer questions and messages (email/sms) or just talk. It just feels that there is some undefined limit per day in the communication for example with phone calls. Other seniors can start to worry if you take contact too often or if your phone calls stretch too long. Relatives are at work during the day and with their families and children during the evenings. It is difficult when you do not know at what kind of situation the others are and when</p>

	you can, for example, make a deep feelings discussion, advice offering or happy phone call. It is nice to meet your acquaintances but it is also nice to live alone and with your own rules.
Subjective component: how the "person" feels	When she is feeling sad, happy or just wanting to ask something, she would like to talk about it to someone, but she does not want to lay the burden on others, she does not want to bother them too much and make them worry about her
Holistic component: why, what and how	She thinks there is the limit how much you are allowed to contact others, you do not want to disturb them too much She makes some phone calls but not as many as she would need
Situated component: when, with whom, where	Daily, family and friend, members of Eläkeliitto From home mainly
Dynamic component: order, timing, saliency of events	She feels the need to talk with someone – she feels worried if and how much she can disturb other people – she would also need to know on what purposes she can contact other people (what is their mood at the same moment)

Table 1 represents one of the Joensuu region user stories described on a jointly agreed analysis template for the different research regions of Europe.

Joensuu regional context emphasizes important features in the cultural and environmental conditions of the Finnish North Karelia region. The collective user story themes contained motivation and opportunities for mutual help among elderly.

Social and physical health: Senior people want to take care of themselves and stay independent, run everyday life errands and enjoy life. The exercise, hobby and everyday activities seem to offer also social possibilities. Elderly go together to exercise hobbies and run errands by offering lifts to other elderly without a car. Running errands for other elderly or visiting elderly in care provides also exercise possibilities when moving in foot or by bicycle.

Healthy and enjoyable food: The one or two person elderly homes are typical and although desiring healthy lifestyle food shopping and preparation can be problematic (not bothering to cook or having physical problems). Especially men might even lack basic skills of cooking. Opportunities exist for offering advice about healthy diet and teaching cooking skills. Help is required also with shopping food and delivering it to home.

Unexpected home care and ICT tasks: Growing older might hinder such heavy tasks as shovelling snow or washing the windows. Fears exist in using ICT and even small counter backs, forgetting or not understanding can suddenly stop elderly. There is a need for help in case of unexpected physical or technical problems in the home environment. Some help, even ICT support, is already available but more, accessible and in short notice would be beneficial.

Special skills – wanting to help others: Many elderly have interesting and useful skills they could use for helping or teaching others. The peer to peer guidance is preferred by many seniors as the peer is talking with the same language and proceeding slow enough. Elderly seem to feel meaningful and needed when helping someone else and using their special skills strengthens their self-respect.

Spontaneous social trips: With long distances transportation problems prevent good aspirations to be active. The seniors without a car must depend on the public transportation making spontaneous trips impossible. Waiting time in places such as the central shopping areas can be long. Lift offerings, joint taxi or public transport trips would be possible solutions.

Changes in life situations: With the elderly drastic changes in life are evident. Retirement leaves an empty place in your activities and social life. Also close people die or have severe physical diseases and the elderly eventually end up with less physical abilities. All this transforms the long term everyday life habits and can force the elderly to move from the old home. The peer to peer support by someone who has already experienced the similar situation is often spontaneously given and also organised by 3<sup>rd</sup> sector actors.

Expelling darkness: Elderly have problems with sudden feelings of being alone, worried and desire to talk with someone but they do not always dare to contact others. Loneliness is a great cause for depression among seniors. In Finland some people especially suffer depression and have worried, alone and meaningless feelings during the dark winter periods. A network of people who you know you call to would be beneficial and organisable by volunteer elderly.

Spotting the nature freaks: Finnish elderly are used to going to the nature and enjoying it. In the Joensuu region the distances are long, there are lots of uninhabited areas and the weather conditions can change rapidly and prove even dangerous. A possibility for long distance follow up would be excellent to make sure that the trekker is Ok. The enthusiasm of Finnish elderly for nature also provides possibilities for experience exchange since the trekker could distribute nature experiences to others.

## The relationship to ICT among the Joensuu elderly

The information about technological skills level, attitudes and equipment in Joensuu was mainly gathered from centres hosting ICT support, guidance and learning for elderly. Partly the instructors are retired persons themselves offering peer to peer support in the use of ICT.

The ICT skills and attitudes vary from not wanting to use to wanting to learn newest technology. However, even technology enthusiasts had sudden problems with the equipment and programmes including problems with English or technology vocabulary. The desirable conditions for elderly technology support are peer to peer guidance and solutions offering easy to remember functions consistent with the earlier technology. Even if having more time than non-retired people the elderly would use ICT only for useful things such as edutainment. Expenses and price questions seemed to come out from many senior services related areas. Also technology learning was considered expensive in addition to the cost of the equipment and running costs. Many seniors could be willing to exchange services and skills also for the monetary reasons.



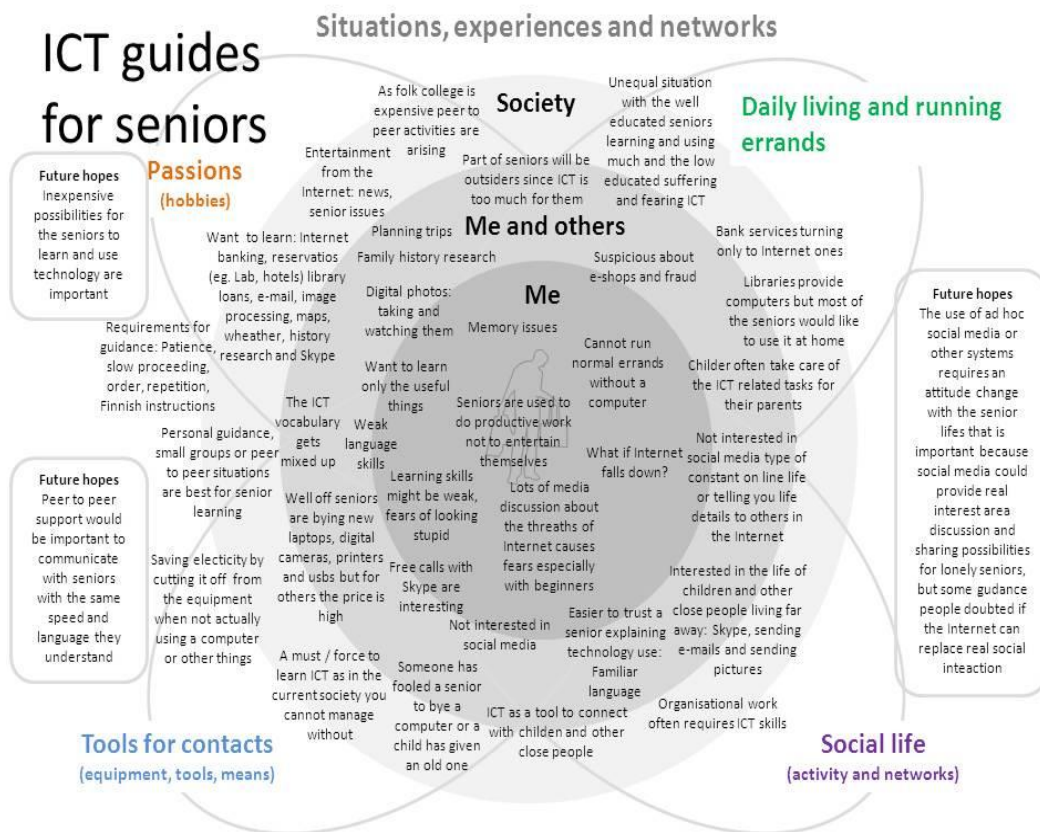


Figure 6 represents the research analysis from the interviews of the ICT guidance persons.



Figure 7 shows a worn out, simple mobile phone, that the owner lady was reluctant to stop using. She had two new ones she did not use as the settings did not correspond to the old one and were difficult to learn.





Figure 8 shows a shell model mobile phone with photo taking ability but no Internet and e-mail access which several of the interviewed seniors owned. The seniors used only few features: phone calls, sms and taking pictures. Some of the owners did not know how to send the pictures forward or save them to computer files so they would just show the pictures from the phone.

The elderly saw the constant online presence as strange. They had willingness to share things if they were meaningful such as sending meaningful pictures. A good example of skilled ICT knowledge was within the 3<sup>rd</sup> sector volunteer work where the secretaries were active e-mail users and producing web pages managing the ICT use even better than many younger adults.

The Joensuu results can be compared to results in the investigations about User Created Content creation in new media (Karahasanovic et al.). A Belgian study investigated social, group level requirements of elderly with results showing very motivated UCC contributors, given the right circumstances. Another Belgian study about individual elderly user and context requirements showed the importance of ease of use and identifying using worries. The individual level ease of use was also an essential factor for elderly active in providing personal profiles and content, sharing photographs and videos. It seems promising that in these studies online communities and communication proved to be a significant ice-breaker for social interaction.

The UCC elderly user research (Karahasanovic et al.) revealed generally positive attitude about new technologies, but problems with learning and anxiety about using. Contextual support for usage such as help from family and friends was suggested for overcoming these obstacles. Also other related research (Editorial. Computers in Human Behavior 25 (3)) shows implications that providing the right support circumstances the elderly might be interested in social networking and content provision in the Internet based platforms.

The peer to peer guidance of ICT seems to have lot of potential for the inclusion of the elderly in the possibilities available for the ICT literate citizens. Elderly ICT use seems not a hopeless case but must be supported in a suitable and understandable way, often with the knowledgeable elderly themselves. The cost and funding of equipment, connections and maintenance is also to be considered.

## Mutual help scenarios from Finland

The service themes and user stories together with the rich ethnographic material provided basis for archetypical user personas and scenario building. User personas helped researchers to identify and represents user motivation in a realistic and lively way (Cooper, 1999; Calde et al. 2002). The user stories offered also, in addition, emotional experiences as a building material since the joint analysis format for the stories had included the subjective feel component for the story.

The scenarios as description of possible alternatives for everyday activity processes (Carrol, 1995) envisioned user information into concrete service processes mapping the potential area for the Life 2.0 platform and services. The user material grounded many of the scenario solutions in actions where the elderly themselves provide content and help required.

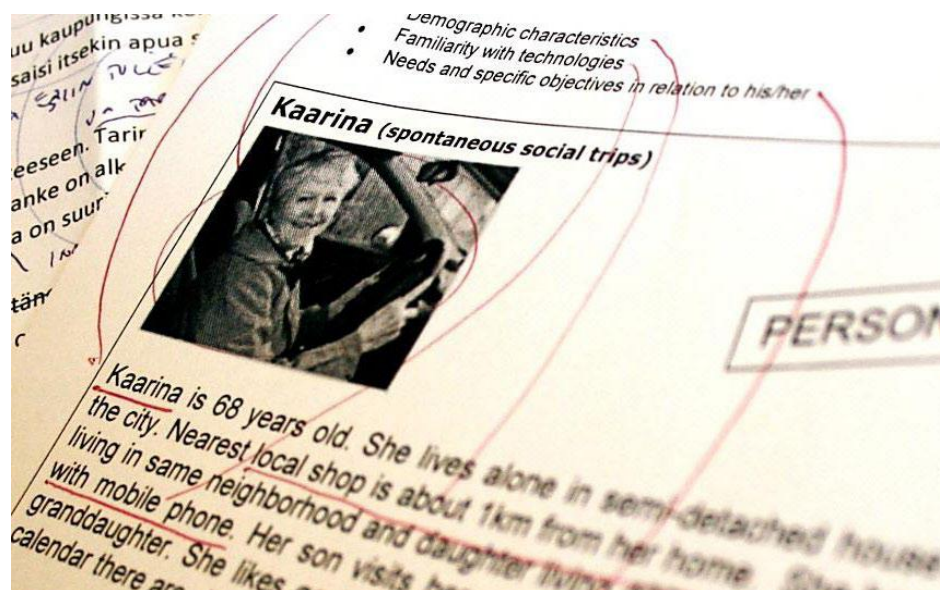


Figure 9 shows an example of a Joensuu user persona describing an alone living elderly widow keen on offering lifts to friends for socialisation.

The types of personas included elderly persons living alone because their partners had passed away. The feeling of been alone especially in north of Europe could correlate with a weak capability to build social relationships. If having special skills singles were often eager to offer help for others to have some company. Also socially active elderly were among the personas and they could be suitable promoters of wider activity groups. Part of the elderly lived with their partners or close to other family members. They often had responsibilities of taking care of the family but might be interested in exchanging turns in some of care activities.

Scenarios described the motivations, challenges, experiences and solutions that the user personas could have in everyday life. As they drew inspiration from the user stories they also included the part how the person feels, often somehow intimidated by the lack of skills, social possibilities, depressed mood or opportunities to meet other people in a purposeful way. Actually all the envisioned Finnish scenarios provided insight into opportunities of peer to peer help. It was typical having certain skills or opportunities such as sports skills or a car for offering lifts but no company with these activities. So the scenarios combined both the offering of guidance and help to receiving at the same time some social company with the activities. Also some elderly were lacking necessary skills for everyday tasks such as cooking

or ICT and guidance could be given by a more skilled peer. The following scenario descriptions further illustrate the form of the envisioned service scenarios and the different forms of help opportunities including safety follow up for nature freak, agreements about availability for friends, and offering peer to peer mentoring in severe life changes.



Figure 10 scenario for long distance nature spotting presents 75 years old Helena living in the city centre. Her husband goes for a night to their summer cottage to do some ice fishing. Helena feels worried: if the husband has returned safely from the lake ice and if the cottage is ok. The husband's mobile phone sends tracking info about his whereabouts. The husband sends Helena via mobile phone a picture of the caught fishes, some sounds of the nature and a picture of the fire in the fireplace.

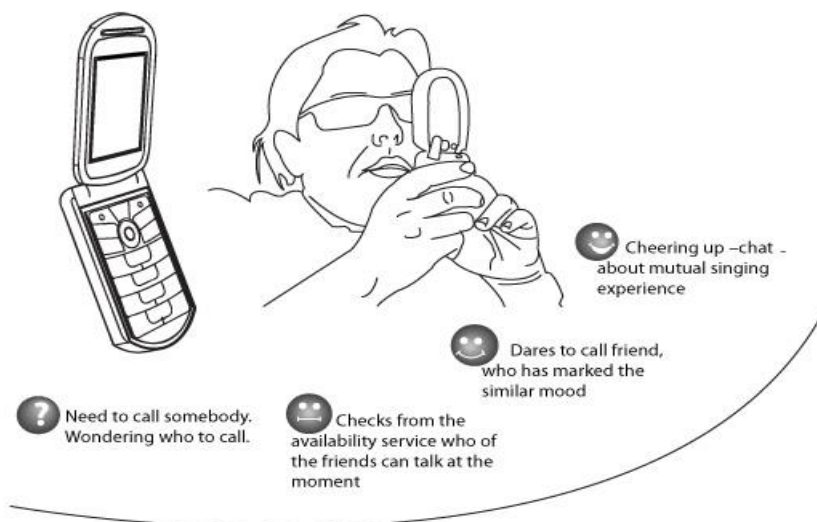


Figure 11 in daring to call friends scenario Kaarina aged 68 years feels anguished the day after her singing group meeting. She could go walking, but the weather outside is not tempting. She knows calling a friend would cheer her up but she prefers only to call a friend, who is in suitable place and mood for a chat. She has service, which shows the availability of herself and her friends tracking home coming automatically as an availability sign. If reluctant to talk she can mark herself unavailable. The system informs friends when the others are available and in need for a chat and on what kind of mood. She sees that a friend from singing group needs to talk too, so she calls her.

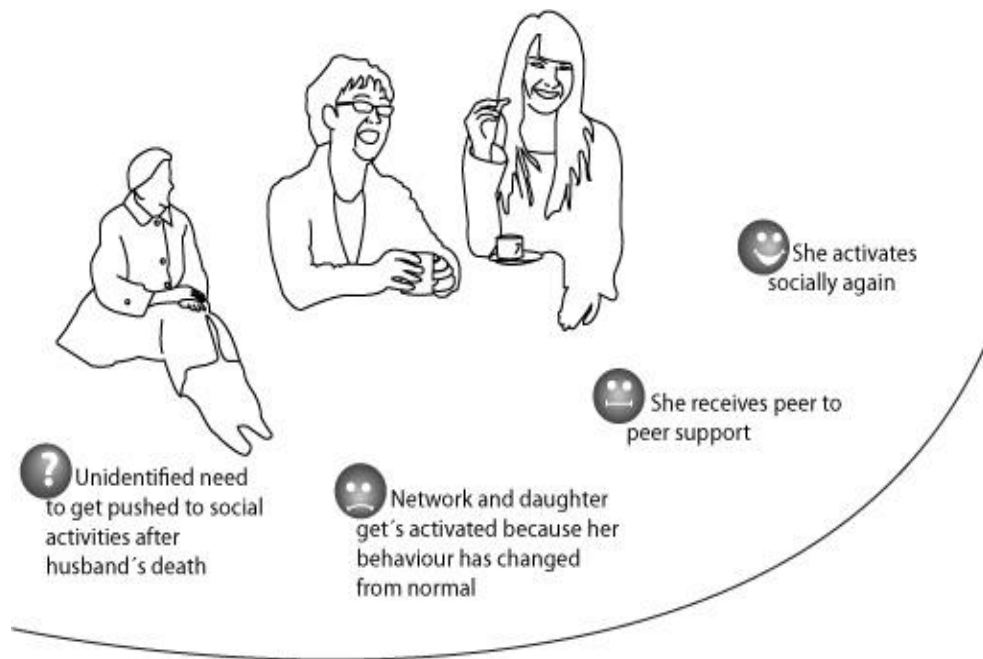


Figure 12 scenario about follow up network describes Pirkko 71 years old widow who has suddenly lost her husband. This stopped her going out and her daughter's long distance calls were not able to activate Pirkko even if social life was extremely important for her. Suddenly she receives a text message: "Hello Pirkko! You have not visited any Eläkeliitto activity for a month and you have not been moving around. Is everything fine with you? Kind regards, Change Support 0401234567" The daughter receives a message: "Change Support has noticed decline in the activities of your mother. Is she OK?". Pirkko herself had booked in to a Change Support system that follows the members through a tracking system in the mobile phone. After the alarm call Pirkko's daughter called the support number and organized peer to peer support. A volunteer who has also lost her husband could support Pirkko to be active again.

The ethnographic work across Europe revealed variation in different cultural contexts from Milano and Barcelona with urban, rich social life and outdoor entertainment to Joensuu with emphasis on mutual help and usefulness since elderly wanted to feel themselves meaningful. The theme of mutual help and support existed in the different countries although the type of help and relationships varied. In Denmark people did not feel comfortable giving free help to strangers, but help inside a closed circle was common. A real difference in attitudes concerned the big changes and difficulties of life where in the Southern Europe the support ideology was strictly family centred. In Finland it seemed more usual for strangers from the 3<sup>rd</sup> sector to provide volunteer peer to peer support.

## The scenario clustering for the platform solution

The service definition of Life 2.0 identified relevant scenarios prioritizing the platform design solution that would support the majority of the important use cases. In the prioritization work the researcher designers analysed the personas and scenarios to narrow clusters of similarities and differences among the pilot site results. Clusters presented potential areas of innovation and design for services and functionalities to be implemented.

Scenario theme	Appears in how many regions	Sphere of potential impact
Social event coordination and signing	3 regions: Milano, Aalborg, Barcelona	Decrease social isolation of elderly; help social provider groups in organising events
Increase and support everyday relationships	4 regions: Milano, Aalborg, Barcelona, Joensuu	Decrease social isolation of elderly and make them more active
Taking care of family member	2 regions: Milano, Joensuu	Decrease isolation and fear creating peer to peer support
Mutual assistance	4 regions: Milano, Aalborg, Barcelona, Joensuu	Decrease social isolation of elderly; potential for costs savings in the public sector

Table 2 analyses created scenarios on the basis of three different dimensions: (i) their macro theme; (ii) the context in which they appeared; (iii) their sphere of potential impact with respect to elderly every days problem.

Taking care of someone scenarios were based on the elderly responsibilities of their family members and friends. Elderly are resources for grandchild care and support for spouses suffering from physical or other disability. Elderly like to be aware of their family members' whereabouts and help needs. Helping is providing a way to spend their free time in a meaningful manner. A system of services could show the movements and the location of the close people, what they are doing, how they feel, what they need and their distance. It would also be beneficial to have access to e-health and care information sources and communicate with such stakeholders as the public social and health care system, 3<sup>rd</sup> sector organisation, or private services.

Social networking and relationships with friends scenarios describe situations in which elderly people build, maintain or develop social relationships in order to have a consistent social life. Social events support elderly to have fun, being more independent, cultivate relationships with friends and overcome sense of loneliness. The services should support people building new friendships, to keep in touch, to be included in some public or private association organizing social events and cultural activity at a reachable area. Also public and 3<sup>rd</sup> sector actors could have tools in providing social support services to the homes of lonely elderly.

Scenarios about information exchange, planning activities or events and organizing mutual help were about the possibilities to exploit on line services to inform and organize communities of elderly in a specific area such as a city or a municipality. In the cases of the exchange and planning scenarios a community of elderly not so familiar to each other could exchange useful information, knowledge and competences. Support for exchanging beneficial information, activities, e-participation, help, advices and resources should be offered to a large community of peers.

The clustered scenarios lead the choice of scenarios for requirements analysis carried out in regional workshops with experts from telecommunications, social services, design, economics, technologies and elderly users. With living lab co-design approach the workshops advanced stakeholders' engagement providing acceptance with early users and stakeholders. The integration for the platform solution continued with joint workshop

focused on identifying similarities and requirements emerging from the distant European contexts and on building the final scenarios for the Life 2.0 platform services. The joint workshop included business evaluation of the platform's value generation and networks of potential participants and beneficiary. In the final choice of scenarios important services proved to be mutual help and organizing joint activities including a market place for business offerings. These three areas of services seemed to cover most of the individual user research based motivations, needs and experiences and allow enough space for the necessary customization for the user situations and inclinations of elderly in the different regions across Europe.

## Piloting as a feasibility tool

The Life 2.0 project continues spring 2012 for a year with home piloting to test feasibility of elderly help and socialisation system with peer to peer content in the Internet based platform. The Life 2.0 platform initiates from the mutual help service tackling the problem that there will not be enough public money or staff to offer public help for the elderly when the demographics turn into high age emphasized direction. The solutions where the elderly can be supported to help and give social support to each other will be crucial. The results in all the European pilot areas point out certain willingness of the elderly to help and socialize with peers. The important inner motivation with the elderly is the strong urge to have a meaningful life.

To challenge is to combine the willingness to help with the attitude, skills and practicalities of ICT technology among the nowadays elderly population who have little ICT use experience. The elderly seem to use Internet and provide user generated content only if they feel it is connected to worthwhile activities in their own life. Mutual help is experienced as meaningful activity so it might provide a good starting point for other Internet based activities. The piloting will reveal the challenges of the technology learning, use and support requirements and also other preventing issues for exchanging help in a social networking system. The safety and other psychological considerations might prove hindrance, especially with those participating people that you do not know. In the research stage the elderly were concerned about safety of giving their personal information out and about questions of other people supervising them as big brother.

It is also a practical question how much you can trust on the structures of mutual volunteer help versus organisations or public actors taking responsibility? How would this be connected to city services? Joensuu city is offering lots of activities and guidance as a problem prevention approach working together with businesses and 3<sup>rd</sup> sector associations. A big problem in public services is when the worried relatives from far away call after visiting the elderly during the holidays. So could a collective platform serve as a first help portal?

For the piloting activities there are lots of considerations about elderly as providers of support content in the sense of what kind of help is really required and what is offered. How well would the time banking really work? Who are the ones giving help and to whom? The most fragile elderly are in biggest need for help and cannot in turn help others. Often the younger elders help older elders and this would require a help system with different generations. This is especially important in the sparsely populated area where the network of helpers should be bigger than the elderly alone since there is the challenge to gather a big enough group in close distance for help provision.



## Further considerations

The practical piloting questions of learning and using a system plus providing help content wait to be answered by testing. This, however, will not solve all the real life challenges. In the Life 2.0 pilot ICT equipment is given free to those elderly participants who do not own them. In real life the cost of the equipment and connections might prove too much for the elderly. If these kinds of systems are part of the elderly support future the public sector has to consider the provision of the equipment and connections for the elderly as they already do for youngsters in some schools and universities.

The idea of mutual help poses also severe consideration of who is the administrator of the platform ratifying the users who can sign in and offer help. The elderly are a vulnerable part of our society. It is possible that someone pretends to be a helper and signs in for cheating or stealing purposes. Are the elderly really willing to participate in a system where they have to reveal their private information and allow total strangers to come to their homes? Can the public senior authorities act as gatekeepers for this kind of systems or some reliable 3<sup>rd</sup> sector organisations? The peer to peer social network recommendation activities may not be enough for the elderly to ensure the services.

It may also feel offensive to comment negatively on people who have offered volunteer help. In the workshop phase elderly expressed strong feelings of dislike to too talk active or in other ways irritating people so they would dislike having those persons at home or offering help for them. All of this kind of discrepancies and they possible solutions have to be evaluated and possible solutions discussed in the piloting phase of the Life 2.0 project. The service platform with user driven service opportunities fulfilled is not enough on its own. The questions of equipment, connections, guidance, support, security, entrance admission, supervision and ways to match unfamiliar people have to be investigated and solved in order to this kind of peer to peer content and help service to really function in everyday practice.

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