

Emerging Digital Practices of Communities / Arjen digitalisoituvat käytännöt (ADIK)



- Final report -

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Executive summary



ADIK project / Photo collage, during the course of the project different community practices and infrastructures were explored through design oriented explorations.

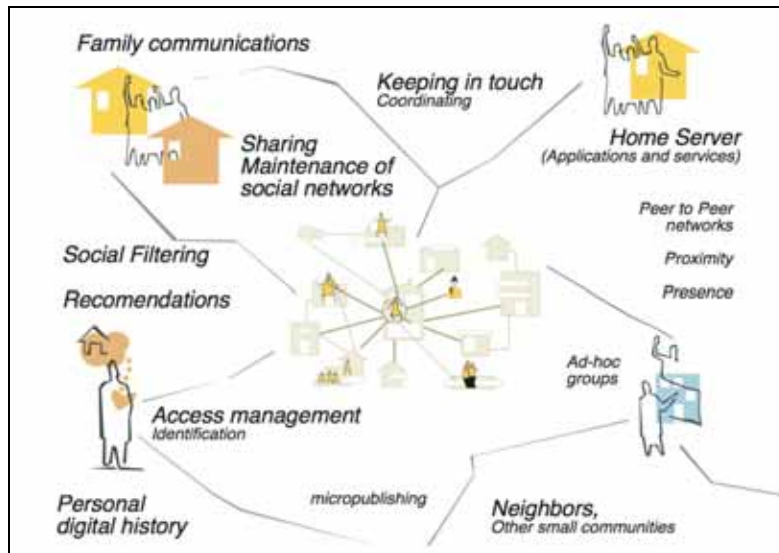
Emerging Digital Practices of Communities (Arjen digitalisoituvat käytännöt in Finnish) ADIK, was a research project of the [Arki research group](#) in the Media Lab of the University of Art and Design Helsinki (TAIK).

An important aim of the project was to understand different ways in which new digital tools give room to the emergence of new practices and, conversely, how people through their practices transform and complement these new tools. To reach these goals the project explored various community practices and how they evolve in interaction with the rapid development of digital technology. During the course of the project several product and services concepts for home and community applications were developed and evaluated through scenarios, workshops, demonstrations and pilots in close collaboration with different communities of interest.

The project was funded by TEKES, Nokia and Elisa.

Introduction

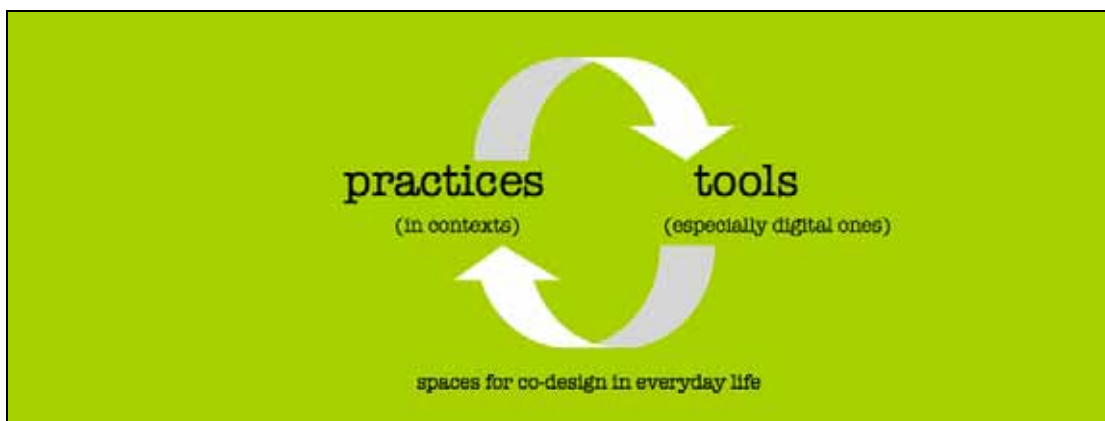
Emerging Digital Practices of Communities (ADIK) project explored different ways in which new digital tools give room to the emergence of new practices and, conversely, how people through their practices transform and complement these new tools. ADIK's aim is to produce understanding that may be useful for product development, specifically for helping R&D to respond to emerging needs.



ADIK project / 2004 Initial mapping of themes and orientation

The project was structured along 3 types of objectives

1. Developing themes and mapping **practices**
2. Develop, present and evaluate new **product and service** concepts
3. Explore, conduct and refine **methods and practices** for **future oriented, co-design approach** (that support the first 2 activities)



ADIK project / Key concepts for the research: practices, tools, co-design

By focusing on **practices** we wanted to bring forward to important dimensions to R&D of new technologies: First: the existence of an ecosystem of *practices* and technological configurations in which new products should become part (be good citizens) if they are to be successfully taken on board in the everyday life of people. In order to do that we chose to do the study in the context of **communities**, and not single users. The main hypothesis being that the life of every community includes shared forms of activity and communal resources around which community endeavours are organized and mediated and mutual relationships are created along with particular forms of practice that would be easy to articulate and discover in a group.

The **tool** aspect points at the role of technology in making possible practices, and the importance of making them "co-designable by the widest possible amount of stakeholders. By introducing these aspects our aim is to inquiry into possible ways in which social processes of innovation -manifested by the new practices *communities* develop- can influence R&D, as opposed to only technological innovations (See original ADIK project research plan. 2003).

1.1 Practices and everyday life

Through the course of the project Practices' have been a key concept guiding the research. As a theoretical concept, practices have been longstanding interest for studies of technology development and design, among others Suchman and Blomberg, based on their work at the R&D unit of a big corporation claimed that "... *design is not the creation of discrete, intrinsically meaningful objects, but the cultural production of new forms of practice*" (Suchman, Blomberg. 1999. pg 404). Recently work by Shove and Pantzar point out at the increase interest in the concept as useful analytical tool for consumption studies, product design and innovation (Pantzar, Shove 2005).

Practices may be seen as everyday "ordinary behaviour" of a group of people in real-life settings, the space where actions and utterances are situated (Wenger, E 1991 and Wynn, E 1991). Among other important things, practices include the activities through which particular kinds of media, information and communication technologies are used. In his book "The practice of everyday life" Michel De Certeau builds a theoretical framework around the understanding of everyday life (*le quotidien*), a sphere where he argues one can find people's sphere of action and of tactical adaptability (De Certeau 1984). Building on this work, and approaching the term through very pragmatic and grounded way, in this report we refer as practices as *those common ways of doing that give our lives continuity*. The ordinary activities or "ways of operating" in everyday life, like de Certeau will put it.

As framework to work with we identified the following basic principles:

- practices give continuity and meaning to our actions
- practices are *shared* activities
- practices create *relations to other people, things and the world*
- practice is not repetition but *adaptation*
- practices are *everyday creativity* and problem-solving
- practices combine the shared and meaningful habits with the specific and creative

Since practices make our lives meaningful but are not rituals that are repeated identically, it is in and through practices that people exercise their everyday creativity and problem-solving abilities. Practices are what De Certeau calls, "consumer production", the silent and ubiquitous production activity made in everyday life (De Certeau 1984 p xxi), that from our point of view constitute an interesting entry point to explore the dimensions of co-design and innovation of new technologies.



Everyday life is not only what is at display here, but the continuities that the photograph cannot capture.

The materials gathered during the research exemplify how people through their practices assemble and integrate technology into complex ecosystems of everyday life. Any new element (products, service, etc) needs to be integrated and “configured” into what exists by people themselves, bringing either the seeds for changing and/or evolving already stabilized practices. Conversely any new element can also fall to integrate and disappear.

remembering and reminding, storytelling

lists - notes - calendars

- reminders -

> Coordinating everyday: performing and organizing tasks

looking back, keeping records,

- TO-Dos - tags - labels -

- archiving
- communicating

- a shared place -

ADIK project / From the fieldwork: Some artifacts related to coordinating everyday. Practices overlap and affect each other; they also share materialities (tools).

Following principles apply to the approach to understand practices used here:

- Interactions are not organized with individual users but with communities around a shared "project". Collaborators (users) are enrolled in managing the identification and introduction of functionality and change in the concepts.
- Focus on practices (not only technology or needs)
- Develop vocabulary and language (through workshops, design artefacts and design prototypes) that can be shared among participants.
- Prototypes, pilots and demos as probes and seeds to understand practices

The following list summarizes the practices that were explored in the project, these practices were not defined from the beginning but rather were discovered as the project developed.

A. Remembering lived experiences: looking back, keeping records, archiving

- Remembering
- Storytelling
- Archiving
- Keeping diary, keeping note-books

B. Coordinating everyday: performing and organizing tasks

- Both community life and personal life
- Time-management: coordination, reservations
- Remembering and reminding?
- Resources: shopping
- Safety/security: practices?

C. Giving a voice: being in touch, expressing oneself

- Sharing
- Storytelling
- Communicating

All the practices deal with aspects of the emerging relationships between "home" digital resources and external services. A note must be made on to clarify the broad sense in which the term "home" was used in the project to refer to aspects of "dwelling" and the strategies with which people "make" their "at home", and not only the physical space of a house / household. Practices are in this sense nothing radically new in their essence, but tactically modified, creatively adapted in everyday life along with new available tools.

1.2 Co-design

By co-design we understand developing a collaborative design approach that entails strategies for active participation of stakeholders thought out the lifecycle of practices and services or products. Co-design builds on the tradition of participatory (Schuler Namioka 1993) and user centred design approaches (Norman 1986) but extends them in to important aspects: First we strive not only to look at the position of users during the design process, but also that of producers, designers and researchers (Botero et al. 2003), and real people as members of the society. Second, co-design attempts to recognize use situations as sites of design and innovation in their own right (Suchman Fischer 2003); we aim to explore ways in which people themselves could continue design in use through their everyday practices, by providing open systems¹.

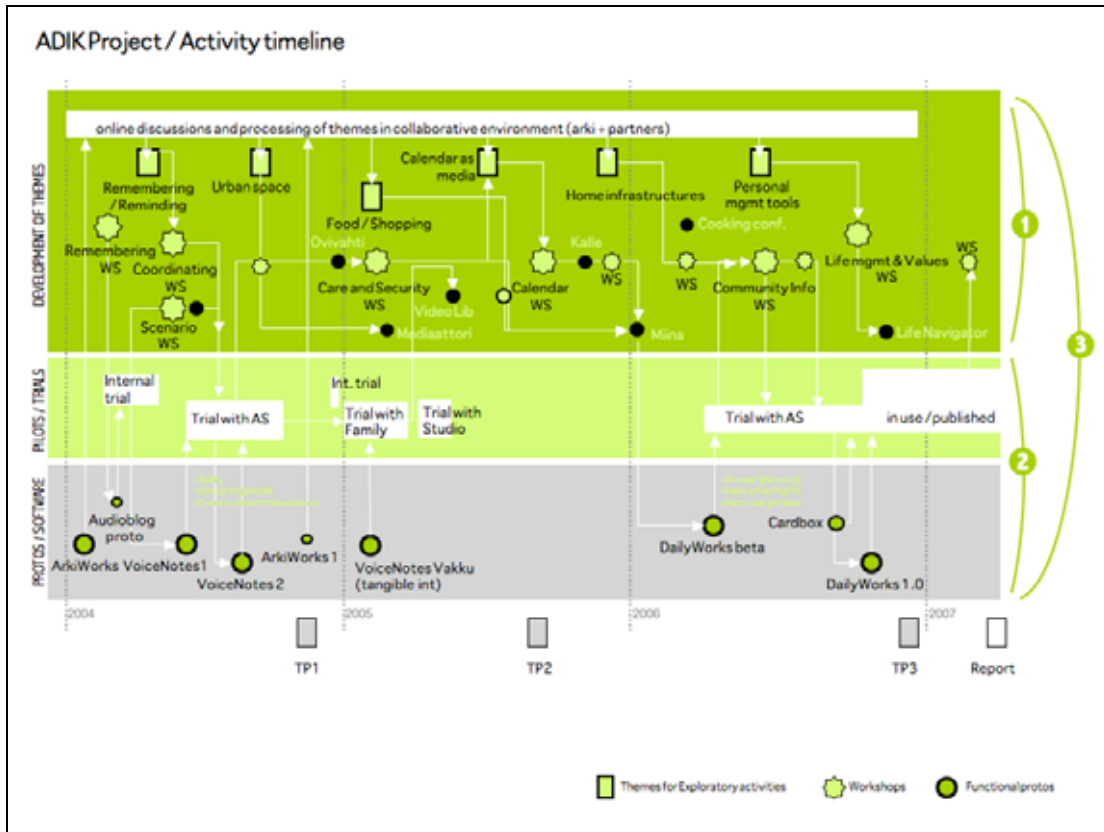
Co-design fundamentally emerges from the understanding that new technology and products can only become successful after people integrate them into their own lives. In this way, people always perform the last steps of the design process and only through the new practices they introduce into the social system (families, communities, networks of friends), the products become interesting to other people.

To facilitate and support better design (and innovation) "in use", end users need to continue the evolution of the artefacts, therefore the products need to have "co-designable qualities" and their designs need to be aware of the dependencies and interactions with the larger ICT and practice ecosystem (Kommonen 1999, 2003).

¹ A more elaborated introduction to co-design framed at the onset of the ADIK project can be found in Mika Myller's introduction to his MA thesis (see references).

Project timeline

The following diagram summarizes different milestones of the project and the interactions between the exploration of themes and concepts with the development of concepts and building of prototypes.



The **Exploratory tools and activities** (■) section includes all the background contextualization and design oriented explorations of the main themes; these include literature review and online discussions but also practical activities like mapping observations into catalogues, probing exercises, making design scenarios and productions all which will be detailed later in this report (see page 11)

One of the project's main working methods was to engage and organize interactions with stakeholders, informants and communities of interest through **Workshops** (⚙️) and collaboratively explore practices, elaborate and define services and product concepts. An overview of the insights and development of the workshops are also documented in this report (see page 22)

Through iterative **Prototyping** (●) we produced the required software components to realize some demonstrations and pilots of home and community applications concepts (see page 27).

During the first two years of ADIK project there was a wide exploration of themes combined with small prototyping exercises. In the last year we concentrate more on Home/life management related practices and a full-blown application (DailyWorks) was developed and released publicly under an open source software license.

Intermediate results and reflections have been documented in three thematic publications, in the project's website and in by presentations in different venues.

Collaborators

Besides the research group the following collaborators were involved in processing and ideation with us:

- Active Seniors ry: Association of senior citizens building a collective project of communal living based on neighbourly help (<http://aktiivisetseiniorit.fi>), the practical arrangements and practices around their communal house called Loppukiri (Last spurt) served as background for many of the scenarios and work during ADIK project. This constitutes the most stable and fruitful collaboration; all through the project AS ry members actively and enthusiastically participated in workshops and ideation sessions, trials and co-design development.
-
- Tampere Winter swimmer ry: An association based on Tampere that practices and promotes ice swimming. The association runs a sauna by the lake and keeps it "open" for swimming during the winter and organize activities for its members around these. Collaboration included probes explorations on calendar related practices.
- The Studio: a community of young professionals of visual or graphic arts who share their working premises. With the Studio we did trials on the theme of time management.
- Different families/households (From the Helsinki region and especially in Arabianranta district) involved in explorations regarding home sharing infrastructures and services
- Information Technology Faculty at Stadia, Helsinki Polytechnic with whom we collaborate for the implementation of DailyWorks, the last software prototype and product (3 BA Thesis where made during the project).

Qualitative and design oriented explorations

From the point of view of co-design, the objective in incorporating these approaches is to build an understanding of existing everyday practices, and how through them people connect the tools and services to other applications, tools and services. These user centric design research approaches attempt to map people's everyday practices and their existing digital ecosystems, as well as understand important structural concepts from the point of view of everyday. Most of them are loosely based on qualitative research approaches (e.g. semi structured interviews, self documentation), supported by design-oriented activities (design probes, scenario based design, visualizations, etc).

These explorations produced contextual materials and provide grounding for a longer co-design process (including ideation workshops as well as concepts and language used for software development and prototyping). The following inventory serves as an index to the rich and varied material gather during the project, some of which is reported independently or in the project online environment.

- For collecting material, charting and engaging people
- For organizing and reflecting on material
- For conversation, reflection and validation (Scenarios)

1.3 For collecting material, charting and engaging people

1.3.1 Observing with catalogues and tours

An ideal way to start documenting existing and emerging practices is to do observations of practices and artefacts in the surroundings. A good strategy to achieve efficiency, organize the materials and give them focus is to elaborate the ideas with the metaphor of a "catalogue" with a theme or a specific topic for a "tour". Observations should be carefully documented (with the aid of photographs or video) and annotated with the help of personal notes.



A photo collection of artifacts, A Catalogue of tactics for remembering a reminding [2004 - A Botero T Lindblom]



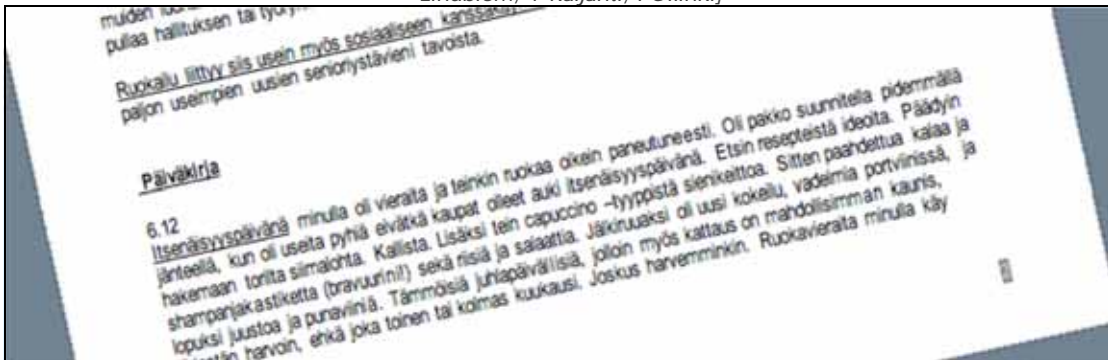
1) A remote "show me your home infrastructure" tour documented with a video chat application (A Botero 2006) 2) A Home tour and interview documented with video [2006- A Botero]

1.3.2 Self documentation and probes

Through log reports or diaries is possible to get a glimpse of life through the eyes of people themselves, the use of this type of strategies for self documentation has long tradition in the social sciences. In Design contexts this has also been brought up, but with more design intense materials in the form of probes (Mätelmäki 2006) that range from cultural and domestic, to residential and technology probes, with emphasis shifting from finding inspiration to informing researchers and even field testing technology. In ADIK we contextualized and ground up most of the concepts through materials collected by probe-like booklets given to collaborators focused on documenting certain practices. This was not only meant to provide inspirational material (Gaver 1999) but rather the booklets included tasks that subtly introduced the research topic to the participants and provided material to help the research team prepare for a joint session (workshop or interview) where this was elaborated.



1) A booklet for collecting lists and To Dos, "collect list of things you must remember" [2004- A Botero T Rajanti I Oillinki] 2) Elonkirjuu and related probe package exploring life management and values [2006- H Niemi-Hugaerts. A Salmi] 3) A Diary booklet for winterswimmers, " tell us about your calendar" [2005- T Lindblom, T Rajanti, I Oillinki]



1) Snapshot of a food diary [2005- J Linkola]

1.3.3 In situ triggers

A low key way to explore opinions and reactions to topics and certain aspects of a concept was done by placing "triggers" in locations that served as background for the proposed concept or topic under inquiry. These triggers are inspired among other things by stickers that appear on public places and surfaces (e.g. advertising some underground music album or some activism related web site). we then ask people to provide input, opinions, comments and feedback on an issue. This activity provided both material for further studying and concrete validation of design ideas and interaction.



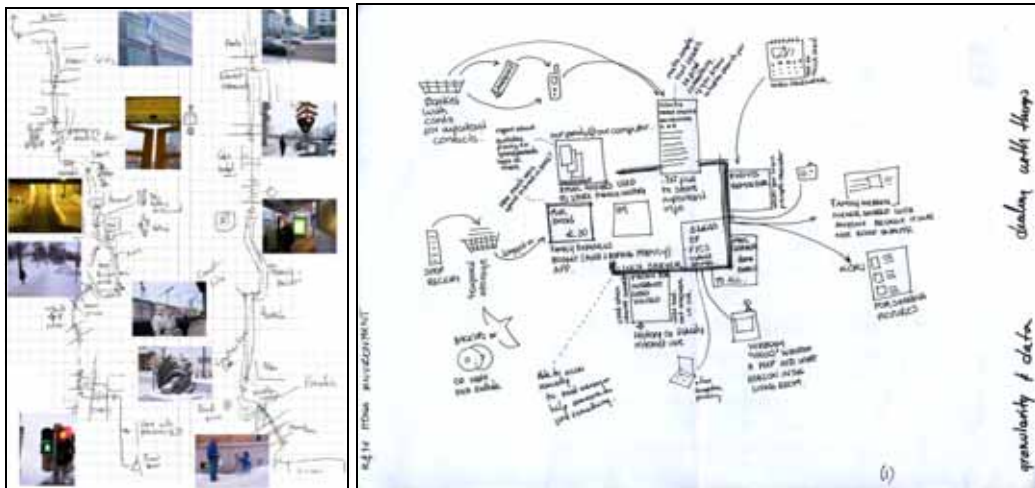
1) Stickers and block for comments left on a bus stop [2004- J Saad-Sulonen] 2- 3) A call for action advertised with a street poster [2004 J Saad-Sulonen] 4) Asking for input by using voice messages on a demo day event [2004 -A Botero, I Oillinki]

1.4 For organizing and reflecting on materials

1.4.1 Maps and visualizations

Maps and visualizations are an effective way to organize the ideas and analyze them in visual and spatial means, this tactic also allow for comparison among instances, serve as index to wider material and good bases for extracting patterns, recurrences and display the diversity of people's practices and surrounding artifacts.

Visualizations as a tool for understanding complex ecosystems has been used by for example urban scholars producing "mental maps" of people's understanding of the city they live in (e.g. Lynch 1960). During the course of the project several maps were built either by people themselves, or with the help and intervention of a designer/researcher as a tool for understanding and making evident people's various digital ecosystems.



1) A daily journey in the city [2004 J Saad-Sulonen] 2) A map of home digital infrastructures [2006 A Botero]

1.4.2 Audio-Visual Productions (experimental)

An experimental production combines the qualities of an experience prototype (Fulton Suri, Buchenau 2000) with an audiovisual production activity to provoke discussion on concrete use cases and inspire new practices. For making an experimental video production, materials from the grounding stage are used, especially those that can be processed in to a product to illustrate ideas. This material supports the discussion of the scenarios and design ideas with concrete examples from the daily routines and knowledge of people: what will it mean to have access to this material in this form? Things that now are to cumbersome and time consuming to do (e.g. make home cooking videos) can become common practices in the future given better tools and interesting use cases. To achieve this designer/researcher(s) are in charge of producing audio/video material with a group of volunteer collaborators (e.g. example around food recipes in home made videos) and further making compilations and "products" to be distributed to all participants.



1) A Mock-up interface for a personal gardening knowledge repository that uses the material of a real garden [2004 A Botero] 2) A Collection of Home-made Video recipes produced with volunteers [2005 A Lagomarsino]

1.4.3 Video Prototypes

Developing concepts and vocabulary that is well grounded on real practices requires continuous reframing and the assumptions for design should be questioned continuously. Influenced by paper-prototyping (Rettig 1994), we experimented with throwaway video prototypes, or short videos that represent a use situation or a design scenario surrounding a practice. The basic idea is that all the necessary placeholders for technological artefacts and other props are made using paper in a very short time (while brainstorming and designing) and then recorded in to the video and edited. (Tikkanen, Botero 2007)



1-2-3) Still-frames from a sketchy video prototype, which explored practices in the light of Context-aware technology and the issue of interruptions [2006- V Tikkanen, A Botero].

The paper props and background elements facilitated a short but playful and enjoyable production period for the video, and ground the design ideas in concrete situations and practices. This has resulted in a surprisingly well-received format, with minimal effort in producing it. This is helpful in the very early stages of definitions and explorations

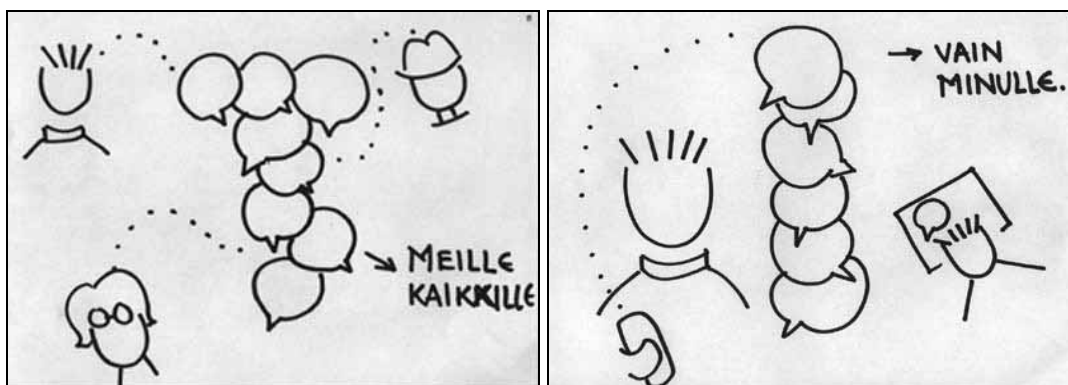
1.5 For conversation, reflection and validation (Scenarios)

We use scenarios to translate insight into practices into design implications and concepts that could be co-designed further. The following collection is a sample of some of the scenarios constructed during the project², they are included here in the original format that they were processed in the context of a workshop setting. The contexts and backgrounds used were refined for the specific contexts of the community collaborators and the stories served as background for the discussion.

They do not necessarily represent full fledged ready designs, however, some of the ideas presented in them where turn into an experimental production or prototype to be tried and discussed for further processing. Furthermore two of them where developed in the context of a MA thesis work (see LifeNavigator and Mediaattori).

1.5.1 Personal media - VoiceNotes

The VoiceNotes concept scenarios and prototypes (see page 28) have been used in ADIK as an exploration of different ways and strategies by which audio notes and messages can support -and evolve- different everyday community practices. The concept offers a simple way to collect and organize personal and shared notes, diary entries and the sort. Notes are generated with a personal device (in this case with audio) and assigned to private collections or made sharable.



Scenario sketches of audio notes produced for triggering discussion in a Workshop [2004- A Botero]

VoiceNotes in family life (by T Rajanti 2004)

Jaana and Vesa are both researchers. Vesa works at the University and is normally away for the day, Jaana for a small firm doing consultation research and does most of her work at home. They have three children, Emilia and Jaakko are at school, Ilona is in the kindergarten.

In the morning Jaana and Vesa make up a shopping-list for Vesa, who will do their shopping on his way home. Vesa will be engaged in a seminar all day. Jaana will take Ilona to the kindergarten and pick her up. Everybody leaves for their work in the morning. Jaana walks with Ilona to the kindergarten, then returns home to start her work.

Jaana has to prepare a new research plan but gets stuck. She walks around their home but no ideas come, so she decides to go for a walk with her walking sticks (kävelysauvat), which usually helps her clear her mind.

While walking her minds starts working. She has a hands-free with which it is relatively easy to keep calling her voice-notes box of work-related stuff (she

² Some of the texts are translated from the original versions in Finnish, which are available in the project site

As the identity of the Loppukiri house is that of friendly community. However, the modern door access systems result to the fact that doors are never open and nobody greets a new visitor. A porter duty is assigned to a resident of Loppukiri house. When a common doorbell rings, they can get a video access to the door camera and greet the visitor. Alternatively, if the porter is downstairs, she or he can greet the visitor in person. Another suggestions include the role of "on-duty" help, where an assigned person will get redirected to her phone all calls from members requiring help.

Ovivahti (by K Lehtimäki 2005)

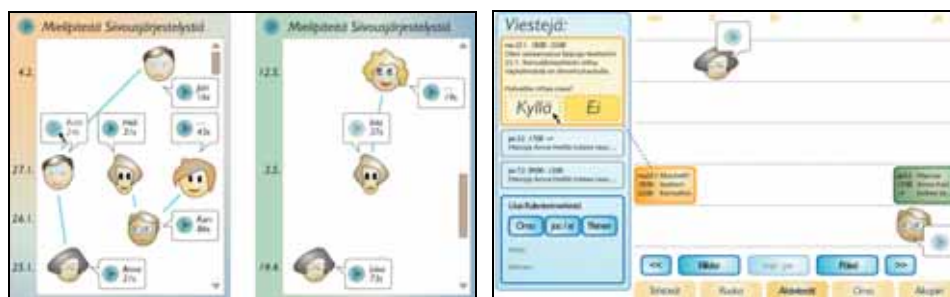
Liisa has porter duty this week in Loppukiri. She has the community guest doorbell video connected to the porter's palmtop device. In the morning the delivery man from the local food collective rings the guest doorbell. He has tried reaching Matti who has been on dinner orders duty, but Matti does not answer his phone or doorbell. Liisa lets the deliveryman in and opens the kitchen door so that the dairy products can be placed in the larder. Liisa has not got the order list for the food but she signs the delivery and writes a note for Matti asking him to check the order before unpacking it.

The children from the local school ring the guest doorbell, Liina checks the video display on his palmtop and speaks into the microphone to ask the children to enter. While she presses the buzzer to release the door lock, she rushes downstairs. The children wish to sell calendars they have published with their class and ask if they can either go and sell them from door to door. Liisa suggests that the children come and visit again in an hour's time when the Active Seniors are dining together. The children can then announce their business to everyone at the same time during the dinner.

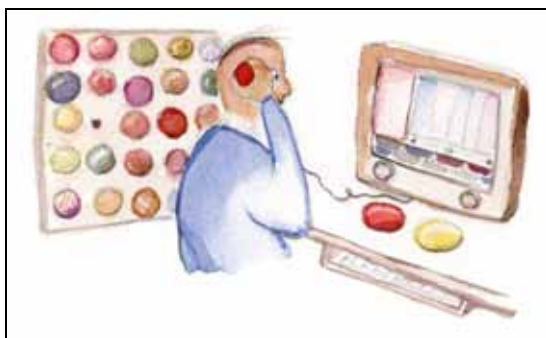
These scenarios were presented to the Active Seniors in a workshop that focused on Security and Safety. The presentation consisted of drawings and a scenario explanation. However, as the scenarios were presented to the Active Seniors, the idea started a life of it's own in their imagination. It was finally implemented with the most appropriate solution at hand: Active Seniors decided that they like the idea of a Porter (ovivahti) and On-call duty so much that they purchased a mobile phone and a SIM card for it, which is then rotated among the members of the community. The emergency number is shown next to the doorbells for visitors who do not have a specific host in Loppukiri for the Porter duty. Carrying the phone also includes the on-call duty so that any member of the community can call in case of need.

1.5.3 Kale - community calendar

Kale concept was a first ideation for a text and audio based calendar type system for a community (based on AS experiences)- The calendar will be the interface for shared resources of a community and its knowledge repository. An important dimension explore with the concept was the possibility of considering a very intuitive and simple to use interface with audio notes accessed with a time view (and special tangible interface). The calendar-working mode was based in simple yes/no messages that would reduce the complexity of the interface.



Interface mock-ups for an asynchronous audio chat in Kale, produced for a workshop [2005 K Lehtimäki]



1) Scenarios illustrations and 2) Mockups of tangible interfaces for the Audio community calendar, produced for a workshop [2005 K Lehtimäki]

Ruokailun järjestäminen: (K Lehtimäki 2005)

Aune ruokaryhmä on vuorossa viikon päästä. He ovat tavanneet ja sopineet ruokalistan. Nyt he haluavat julkaista sen. Aune kirjautuu sisään "Kaleen", (etsii ensi viikon maanantain ja) valitsee "Lähetä kutsu" toiminnon

Kutsu avautuu, Aune valitsee sen tyyppiä ruokailmoituksen, vastaanottajiksi kaikki talossa olevat ja tyyliksi kyllä/ei vastattava. Viestiksi Aune kirjoittaa maanantain ruokalistan ja äänittää viestin sisällön: hän painaa ilmoituksessa olevaa äänikuplaa joka on tyhjä; mikrofonin äänitysnapia painamalla viesti alkaa äänittyä ja ruudulle piiryy punainen äänityslogo ja grafiikka joka kertoo äänenvoimakkuuden riittävyys puheen aikana. Viestin äänitettään Aune laskee irti äänitysnapista ja viesti tallentuu. Aune lähettää viestin ja siirtyy tiistai-illan ilmoitukseen

Ilmoittautuminen ääniliittymästä: (K Lehtimäki 2005)

Marja kirjautuu sisään Kaleen. Hän kääntää äänen kovalle ja asettaa kädet "kyllä" ja "ei" painikkeille. Marja kuulee aikajärjestyksessä ruokailmoitukset Kukin ääniviesti alkaa kohdepäiväyksellä, ilmoituksen jättäjän nimellä ja viestityypillä, jotka saadaan esiäänitetyistä sanoista aina kun Marja on painanut "kyllä" viestin lukeminen katkeaa ja siirtyy seuraavaan Torstain ruokailusta Marja ei ole vielä varma, joten hän jättää vastaamatta viestiin - seuraavalla kerralla viesti on vielä "uudet" listassa ja hän voi kuunnella sen uudestaan ja vastata sitten.

These scenarios were introduced in a workshop around calendar solutions and practices and form the basis for further development of Miina concept and the specification of DailyWorks prototype and software product (see pg. 30).

1.5.4 My garden of recipes

The concept explores issues surrounding self-media production and sharing, specifically of content created to document ones history and knowledge, for example cooking recipes or gardening tricks. These types of things are of personal intimate value but also considered as potentially sharable with others (family and surrounding communities). Some of the exploration material showed how the increasing availability of personal media production tools has sprung many of these types of activities for which a coherent and straightforward solution that guarantees long-term availability and archiving and sharing is not yet available.

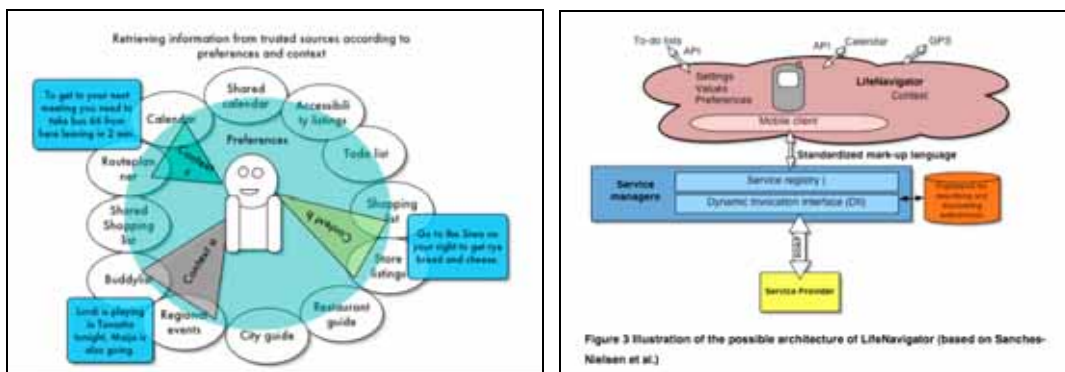
she has to hold on to the dog's leash in a strong grip but she's struggling with the bags. When she finally reaches the trashcan in Oikokatu she notices the new Krunikka Mediaattori board that has been added to the square. She decides to send a reminder to herself, from her personal device to her computer, to write something about the lack of trash cans. At home, she opens her computer and notices the reminder. She goes to the Kruununuhaka Mediaattori pages and writes a small message. She decided that she also wants this message to appear on three of the public displays in Kruununuhaka: the one at the Liisankatu bus stop, the one in the Oikokatu square and the one in Tervasaari. For that, she has to choose a short title for her message. She decides on: "We need more trash cans!", and sends her message. Before switching off her computer, she notices that she just got a message from Pete. He asks her whether she wants to go and check out the new restaurant in Kruununuhaka. Nanna clicks then on the link Pete sent and decides that indeed it would be good idea to go eat there.

<http://mlab.uiah.fi/publicspaces/>

<http://www2.uiah.fi/jsaadsu/MAThesis/jsaadsulonen.pdf>

1.5.6 LifeNavigator

LifeNavigator is a concept for a mobile application that gathers data from chosen sources (such as user's calendar, reminders, account information) and makes suggestions for the user's next move according to the parameters set by him/her. People would decide what kind of suggestions they want to have from the LifeNavigator by setting certain parameters⁴ to best describe the priorities in their life. People could also choose their trustees (let it be friends, fashion magazine, NGO or supermarkets and other companies); sources of information as well as end-users of the information they themselves would like to share with others (for example defining who can access their shopping lists or locate them).



1) Some aspects of LifeNavigator's design space 2) Possible architecture for of LifeNavigator [2007- H Niemi-Hugaerts]

The concept was used in combination with probes, scenario based interviews and a workshop, to develop a set of qualities that needs to be taken in consideration when designing this type of applications and services⁵ and what implications it might have on the existing practices of life management (Niemi-Hugaerts 2007). Only one out of the 10 scenarios included in the final thesis is presented here.

Lets you personalize it to your needs, all the way (by H Niemi-Hugaerts 2007)

⁴ These parameters could be such as time saving, shortest distance, social, cultural, accessible, ecological, cheapest. The only limitation is that it can be used as a way of processing information by the application, eg. it can be communicated with a clear format and a value.

⁵ control, independency richness of content and functions, trust, community, providing motivation, context-awareness and on- demand service.

Marjatta is looking for a new mobile phone. She has decided that she wants one that has LifeNavigator in it. After comparing the prices she chooses the one that has a bit bigger buttons.

At home she changes the sim-card and turns on the phone. Address book was already copied by the store, but now she has to set up the LifeNavigator. She heard from her friend that it takes almost half an hour, but it is supposed to be worth it. Marjatta is not very familiar with technical things. So she's a bit worried how this will go. She opens the application and it starts guiding her through the process. First she selects three most important things to her: family, being in the nature and Finnish products. That was easy, she thought. Then she has to put them into an order. First it seems difficult to compare these things, but after a bit of thinking, she keeps them in the order she selected them. I can always change them if this doesn't work out, she thinks. Then she has to set up her calendar. LN offers the synchronizing option, but Marjatta has never used a digital calendar, so there's nothing to synchronize. But then she remembers that her Työväenopisto courses had codes that let her join the shared calendar and have the calendar automatically updated to her phone. She looks that up and sees the data coming to her LN. She also notices that her family members birthdays are already in the calendar, retrieved from the phonebook. Then LN asks whether she wants to use the navigating guide while moving around. She chooses not when in 5 km radius from home, since she knows her neighbourhood well enough.

The reminders for shopping list and to-do list she wants, because she likes to get things done when she's around the stores. Then she can choose the trustees; people, communities or other sources (magazines, organizations) that she trusts for providing her with data for the suggestions that LN gives her. She chooses her family and relatives, but also Suomen Latu and Kodin Kuvalehti. This will be interesting she thinks, feeling still safe since it all seems to be under her control. As the last step, she can share her calendar and shopping lists. She selects to share parts of her calendar with her old friend Pirjo and also her closest family. Shopping list she keeps still private, but keeps the option to share some things from it with her daughter who lives in Tallinn, and can maybe find those things for her cheaper from there. After finishing the set-up she feels good for being able to complete that on her own. She is still a bit sceptical about this whole thing. At least she won't be like those teenagers who use LN to keep themselves busy and social every minute. She made the settings so that she gets suggestions only when she asks for them. And she will be able to turn it all off when she wants.. "Anyway, now it is time to get out there and test this thing" with her other hand already in the sleeve of her jacket.

<http://mlab.uiah.fi/~hniemi/blog/?cat=11>

Finding focus and guiding design work through workshops

Workshops were the articulating events that channel and focus the activities of the project. During the 3 years of the project around 20 different workshops were organized both internally and with collaborating stakeholders. These workshops either brought people together to work and produce material on a specific topic (usually through hands on activities) or to achieve consensus and shared view on a trial/an idea and formalize decisions and move forward.

1.5.7 A way of working

A variety of versions and understandings of what is a workshop exists. During the course of the project we have formulated a guiding script that works for the kind of co-design activities we are developing and that includes articulating material, design activities and negotiation and decision-making:

- Design and distribute among participants a pre-workshop activity that will make them aware of the implications in everyday life of the themes the workshop will address and raise some subtle thoughts before the event. This is mostly done through some self-documentation task that is then brought as the starting point for the session and contributes to ground the ideas.
- Compared to a focus group situation a workshop draws from the contextual material gathered in other explorative activities, presents tasks and in general expects more interaction from participants as activities designed to help participants contribute are introduced. Contextualizing material and concrete examples gathered during a pre-workshop task act as reference that can be "pointed at" while working together, but also to bridge conflicting views or "dead" moments.
- Designers and researchers act as facilitators that most engage participants, ensure that all opinions are heard and considered, note areas of consensus and differences, and keep the discussion moving so that the group can complete its task in the time allotted.

1.5.8 Overview of the workshops themes and approach

What follows is a sample of some of the workshops organized and their themes:

A. Remembering and Reminding:

To explore practices related to remembering and reminding we invited a group of people to think about "what do they have to remember during a day". Participants had been given a small scenario of what a seven-year old girl had to remember getting during a day, and were asked to make lists of the things they had to remember and remind during one day. During the meeting the items on the lists were "placed", helped by a "catalogue of remembering and reminding" ideated by the team before and practices were collectively mapped.



1) Participants of Remembering and Reminding WS place items of their TO DO lists on a catalogue of related artifacts 2) One Participant introduces her pre-workshop documentation task [2004 A Botero T Rajanti I Oilinkij]

B Coordinating and arranging activities:

What does it mean to coordinate and arrange resources and people to make some activity happen? What sorts of things are involved? What kind of practices do we have for handling that: how responsibility, communication, logistics etc is divided among the community and the role of different artefacts in such endeavour. A group of members of AS ry involved in organizing things where invited to reflect on practices they have identified and developed for this purpose. We mapped what moves around from where and when, who and what is involved. Followed by discussion on wishes, troubles and work-a rounds; ending up on presenting teasers and ideation part.



1) Participants of Remembering and Reminding WS place items of their TO DO lists on a catalogue of related artifacts 2) One Participant introduces her pre-workshop documentation task [2004 A Botero T Rajanti I Oilinkij]

C Audio production in everyday life:

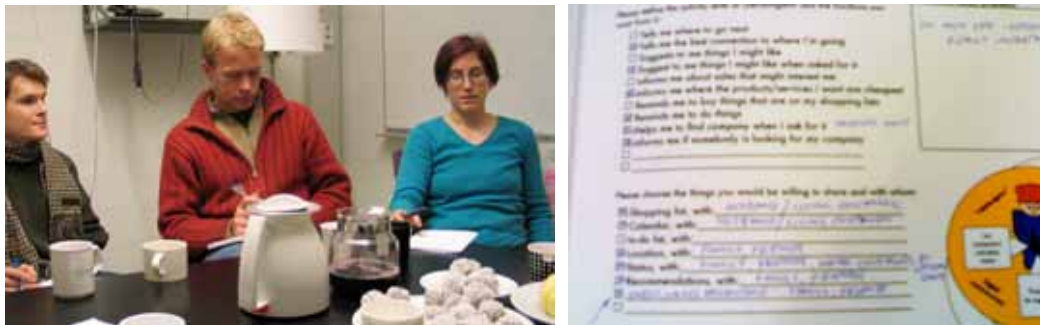
To explore further issues surrounding remembering and coordination for activities a session with scenarios around possible audio production applications supporting this practices was organized. Participants were keen on ensuring that the scenarios developed were not meant to replace one's capacity of memory, but if possible, help one in the task of remembering, and help one keep up one's capacity and control over one's memory.



Possibilities of audio production in everyday life analyzed in a workshop [2004 - T Rajanti, A Botero I Ollinki]

D. Life Management: Ecosystems and Values in practice:

Ethical consumers have to go through a lot of trouble in their daily life to stick to their principles and usually devise particular practices to help them cope, our hypothesis was that they can be considered "lead users" for a Life management type of application. We organized a workshop with a group of people all interested in ethical consumption, where several practices of daily life management were mapped along with the intersections of them and issues of values and preferences were discussed. The workshop used the concept of LifeNavigator to dig the relevant issues and identify themes.



Life Management and Values practices in a workshop with a group of ethical consumers [2006 -H Niemi-Hugaerts, A Botero]

E. Care and security:

This workshop's objective was to map a community's current care and safety practices and at the same time ideate new ones. Members of AS ry discussed their plans for the new housing arrangement and their general impressions through placing instances onto a diagram, which maps physical and social dimensions. The primary axis of the diagram indicated the physical distance of the practice from the problem and the secondary axis indicated whether the practice relied on social contacts or individual use of technology. One of the main insights from this activity was to note that a practice of individual use of technology combined with physical distance from the problem was practically non-existent. Their current safety practices involved other people, neighbours, relatives (people who take care of the place or who can be called to in case of need).



Care and Security practices, mapping physical and social dimensions [2005 - T Rajanti, K Lehtimäki, I Ollinki]

F. Calendars:

A workshop was organized to brainstorm and formalize the features an ideal community calendar should have for AS ry. The main driver was the idea that coordination of many community tasks requires a calendar, which in turn can also provide some rudimentary safety features, like a list of present first aides or information on people who have not accessed and used the calendar recently. A concept called Miina was defined (see Miina concept in section 1.8.1 pag 30) and using material from the workshop as a starting point a team from AS ry wrote the first specification document for the application and services as a result.



The ideal features and functions of a community calendar are listed and grouped [2005 K Lehtimäki]

G. User interfaces for Community calendar:

With DailyWorks in production (software prototypes introduced in section 6 page 30) several workshops were organized to discuss and present the UI sketches and plans of the system with the help of paper prototypes.

Early sketches and mock-ups were used to clarify the concepts as well as to discover the interlinkage of several practices. These activities were mapped to the software development process as closely as possible.



Looking at the UI for a community everyday life management tool with the help of paper prototypes [2006- K Lehtimäki, R Suzi J Lindroos, K Raitanen, J Kostiaainen]

H. Information boards for a Community calendar:

After the first software prototype of DailyWorks (Miina) was in use for a few months in the Loppukiri community⁶, it was evident that new practices were required to effectively incorporate all the community. For this we organized a series of workshops where a new component for the application (called cardbox) was developed. The ideas were gathered from feedback and observation of emergent practices of the community using the application. Through workshops both with the project and internally in the AS ry community the component was designed and tested.



Brainstorming new information boards for the system using a newly introduced component in AS Miina [2006- A Botero]

⁶ It is worth noting that the team from AS ry in Loppukiri even organized and carry out usability evaluations and trials of the applications and collectively reflect on their processes;

Explorations through Prototypes

Since the time of Henry Dreyfuss, pioneer of most of the empirical design methods (Dreyfuss 1955), and the first experiments by the UTOPIA project with cooperative prototyping (Ehn, P. and Kyng, M. 1991), prototypes have established themselves as tool and jargon for many traditional research and development processes. Most of the discussion has however centred on ways prototypes could be used for testing already existing hypotheses or finalized ideas (see for example Erickson, T. 1995, and Holtzblatt, K. and Beyer, H. 1996).

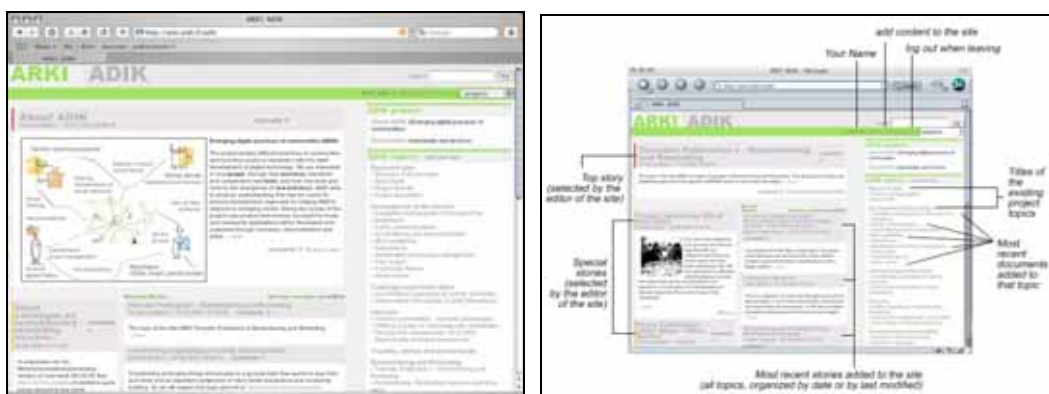
Knowledge of practices and understanding of possibilities can be achieved not only through observations and analysis of already existing community practices. A situated intervention process, with design prototypes, can also be a way to achieve a fruitful engagement with communities in a participatory ideation process with the aim of co-designing adequate and relevant tools for the community itself.

The role of prototypes in ADIK can be better understood as a means to provoke a more general discussion and ideation process on the feasibility of certain practices (see ADIK TP2) and how these should be grounded in existing practices or not. We propose that a co-design agenda includes influencing and proposing practices, while at the same time better understanding their context. The use of a functional prototype allowed us to introduce a system (albeit an unstable one) in ordinary locations to look at this interplay.

Through this line of action we also provide infrastructure and maintenance for the project's online collaborative environment.

1.6 ArkiWorks

ArkiWorks is the research group's own experimental collaborative environment, it also acts as framework for building infrastructures to pilot some of the design ideas developed in the ADIK project and to observe and reflect on the needs of collaborative work. ArkiWorks was built on Zope (a Python based open source web service development platform <http://www.zope.org>), and CMF (a Zope based content management framework). The online environment was in constant use during the project and hosts several other projects at the moment.



Screenshots of ArkiWorks user interface and some of its main functionalities
[2004 - M Lara, M Myller, A Botero, K-H Kommonen]



- 1) A catalogue of design research materials made with ArkiWorks [2004 - A Botero T Lindblom]
- 2) A forum implemented with ArkiWorks for involving a community in discussing food related practices [2005 - J Linkola]

The online environment was a means of discussion and information exchange for the research group in its internal development of themes. Due to resource constraints many features that should have been implemented remain only at the specification level, and therefore easy and continuous contribution from the industrial partners or collaborators in the online discussion was lower than we expected.

General background: blogging, collective media production, collaborative work
Incorporated insights from ADIK: Internal Workshops, Organizing Activities Workshop, Remembering Practices Catalogue

1.7 VoiceNotes

With this prototype and related trials we aimed at offering people "seed" tools for making notes (with audio) for various individual and shared purposes and then exploring how the notes are utilized, the kinds of listening strategies that appear, the recording opportunities that present themselves, and how the notes need to be archived, acknowledged, and shared.

Concept in brief:

The tool should offer a simple way to collect and organize personal notes, diary entries and the sort. Notes are generated with a personal device (in this case with audio) and assigned to private collections. Furthermore the tool should offer a simple way to collect, share and organize ideas that are generated by different people at different times. There are features to set up groups, rearrange collections and notes, comment and so forth according to the needs. Individual notes and collections are accessible through different interfaces (screens, personal devices, etc).

General background: podcasts, blogging, micro content, personal media production
Incorporated insights from ADIK: Remembering and Reminding Workshop, Organizing Activities Workshop, Remembering Practices Catalogue

1.7.1 Audioblog prototype

A First internal pre-trial was assembled by creating a simple audio blog interface [2004 K-H Kommonen] in ArkiWorks for internal use of the research group. This prototype was a proof of concept focusing on the possibility to call on the phone and get audio directly on the server. Based on this very rough prototype that could be used only for collecting audio notes, we decided to explore further the possibilities of audio in supporting different practices in communities.

1.7.2 VoiceNotes proto

The development of VoiceNotes was rather about systems integration than the creation of something totally new from scratch (Myller 2005). Technically the prototype was built with a phone Answering Service (Sonera), an email server application (Mail Boxer), and a Web User Interface (with an embedded QuickTime Player) that aggregates all the notes. The main functionality was built on top of Zope (open-source web application server), and Zope CMF (Content Management Framework)



User Interface screenshots of VoiceNotes in a PC [2004- M Myller, A Botero]

By combining some ready made components we were able to prototype the concept quickly with out having to write custom software for the phone (since current recording functionality was very rough at that time) however this limited our design in other ways.

First iteration was implemented with a rough prototype (Voicenotes 0) with simple functionality. In there the voice message is sent as an email to the server where it is placed in the right collection. The phone number was used to determine the authorship of the generate message, "voicenote", and the number of answering service was used to determine if the message is sharable or private. Participants could log in to website to hear, comment and sort the voicenotes.

During this trial hearing and managing of the voicenotes was only available through the web interface thought the scenarios included the idea of the phone as complete interface. A second iteration of the prototype (VoiceNotes 1) included some functionality to edit and comment text fields around the voicenotes by creating a more complex web document.

Applications

The first application trial supported personal notes (A) for two interested members of the AS community who participated. They called their applications "Black hole" and "Misse" respectively, and collected notes and personal experiences using a prototype of VoiceNotes during a three month period. The second application was called "Ideariihi" and involved nine people of the managing board of the AS community using a prototype of VoiceNotes. They used the Ideariihi to plan meetings over a period of three months. A third instance was open to all members of the community and was set up to invited people to leave ideas of what to do in Helsinki, nice books to read or places to visit. Using same platform we also did an internal research trial to organize our own Christmas (pikkujoulu) party

The trials had many limitations due to the nature of the prototype, technical difficulties in setting up the components at people's homes and time of the trial. However the idea behind and the related practices that support was found useful. Concrete experiences with the prototypes and the proposed functionality sprung many ideation of the qualities and functionalities that such a tool and services should have.

1.7.3 Vaakku prototype

Vaakku prototype used the VoiceNotes basic functionality and extended it to create a different tangible interface (that uses a hacked mobile terminal) to explore informal family communications and children's story telling. Vaakku offers a simple way for children to send a voice message or story to their parents. When Vaakku's head is squeezed, children can speak out their messages. Squeezing Vaakku's tail finishes the recording and the audio message finds its way to the parents.



Iisakki during the trial of Vaakku a tangible interface prototype for VoiceNotes [2005- K Lehtimäki, based on a concept by T Lindblom]

Key characteristics: Leave voice messages to one destination, No need for numeric literacy, Used for commenting, sharing stories and leaving notes.

1.8 DailyWorks

DailyWorks is a collection of tools for communities, which assists in the coordination and sharing of everyday life activities and information. Built around a metaphor of a series of calendars that form up a "community calendar" this web base application provides resources for planning activities, providing presence information and sharing information. In ADIK project, we have used DailyWorks as a prototype to explore, probe and understand communities' everyday life practices. What are the limits and possibilities of digital tools that assist the management of everyday life activities? How can we understand better the interplay between practices and tools?

1.8.1 Miina concept

During some of the workshops organized in the project the idea of a community calendar that would provide solutions to organization and coordination of shared tasks and at the same time will care for giving a sense of security, belongingness and independence started to get shape. In December we jointly with STADIA⁷ decided on to design and implement a "community calendar" that was name by Active Seniors as *Miina* because "the system can accomplish so many things as Miina Sillanpää could."⁸

Active Seniors contribution for the concept did not end up in giving name for the system, they drafted the first specification of it and participated in its development through workshops, trying out prototypes and self-organized usability tests.

⁷ Stadia, Helsinki Polytechnic: Information Technology Faculty, Coordinator: Kari Björn. Students: Jarno Lindroos, Kalervo Raitanen, Jarkko Kostiainen

⁸ Miina Sillanpää (1866 – 1952) was one of the first nineteen female members of the Parliament of Finland and Finland's first female minister. She was also a key figure in the workers' movement and worked in various professions during her life.

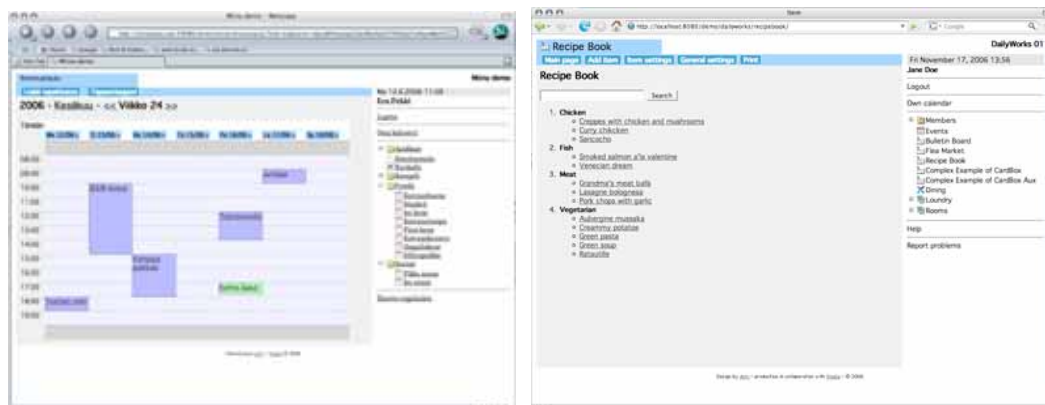


Early sketches of a community calendar for AS ry [2005- K Lehtimäki]

1.8.2 DailyWorks prototype (v1.0)

During the course of the project, Miina concept, grew into DailyWorks application, which is a more general-purpose framework that could serve other communities as well (e.g. groups of friends and clubs, residents associations, extended families, food buying circles, day-care circles, to name a few of the cases we have in mind).

It is worth noticing that, since some of the topics dealt with AS ry collective cooking and cleaning activities, sharing of resources, security, care and communication in general, some of the components of the current version reflect directly those practices.



Screenshots of Daily Works Group Calendar view and a Recipe Book built with Cardbox [2006- M Myller, R Suzi, K Lehtimäki, A Botero]

With DailyWorks a community can setup personal and shared calendars to organize communal events and happenings (dinners, theatre trips, etc.), allocate and manage household maintenance tasks (cooking, cleaning etc.) and reserve and manage shared resources (sauna, laundry room, sewing machine, etc). Furthermore shared repositories of information and ideas can be easily designed and maintained (recipe books, bulletin board, a flea market or simple diary) by the community itself.

DailyWorks components and applications

DailyWorks is a Zope product. It's calendar functionality is based on third parties open source Zope products, CalCore, CalZope and CPSSharedCalendar. It's user interface is available currently in English and Finnish.

- DailyWorks core operates as framework for other products and takes care of common use cases such as login and navigation. Other products and components are pluggable into it.

- DailyWorks Personal Calendar provides each member with a calendar, which they can use to organize private and public events, register to the community activities, follow their reservations and subscribe to other calendars that are available.
- DailyWorks Group Calendar is a shared calendar for planning, informing and registering to interesting events.
- DailyWorks Dining Calendar is a special kind of calendar for planning and registering to shared meals. This calendar provides different reporting options that allow the community to plan shopping and organize billing activities if needed. A dining calendar can be connected to a shared recipe book to create the menus and organize the cooking and shopping.
- DailyWorks Resource Calendar is another special kind of calendar that can be created for each shared resource, allowing the community to set rules for their use and managing their reservation or availability.
- DailyWorks Cardbox is a generic tool that can be used to create, group and organize information in meaningful collections with unique structures. Each CardBox can have its own structure and fields that can be change and evolve easily without the need of programming.
- DailyWorks Profile is a tool for collecting the information of the members of the community

Complete documentation and Demos are available:

<http://arki.uiah.fi/adik/dailyworks/>

Versions and trials

Miina (DailyWorks alpha) was deployed for the first time in May 2006. This was roughly at the same time as the Active Seniors moved to their recently finished communal house, Loppukiri.

Starting from the first delivery of Miina the Active Seniors tested the system vigorously and brainstormed on their own to figure out what they expected from the system. As the seniors reported about the new bugs and decisions about new features were made, the bugs were fixed and new features were implemented and deployed almost immediately for the seniors to trial. At the same time concrete practices of coordinating activities and sharing resources where being evolved with the tools.

In August, while Miina was getting more stable (DailyWorks beta) and when all mandatory products where in place (the site itself, profiles for personal information and calendars for personal use and for groups and for dining and resources) we found that we had time finally to implement the Recipe Book that was left out because there wasn't anyone to whom we could have assign its development. The development of Recipe Book lead to one of the most interesting co-design instances of the Miina project, where the Recipe Book worked as a seed for the software evolution (Fischer, G., Ostwald, J., 2002).

The Recipe Book was implemented based on the Profiles tools and realized very fast. After having the Recipe Book in use for some days the Active Seniors asked if it were possible to use the Recipe Book also as a bulletin board in case we don't have time to implement one. They had recognized a need for storing various notes and documents while they were testing the system and planning the practices of Loppukiri, which they had not paid so much attention earlier. In here, the Recipe book had been operating like a seed for evolutionary growth. To avoid end up in the circle of implementing various boards and books for diverse purposes but to instead empower the Active Seniors with tools; we rethought the component again.

During the transformation process of Profiles to Recipe Book our lead software developer realized that if done properly we could provide a more generic note book kind product, which would allow users to define fields for index cards and then manage those cards (add, modify, remove, search information) and thus keep track of

names, addresses, phone numbers, recipes, or anything else one needed to store. Inspired by Apple's HyperCard (<http://en.wikipedia.org/wiki/HyperCard>) and FileMaker (<http://www.filemaker.com/>) a simple database management system (DBMS) was implemented very rapidly. The simplicity of the data model was the main design principle used for the development of this component that we called CardBox.

After having CardBox in the palette of tools in November we released the final version of Miina to the public under the DailyWorks name 1.0 and updated the version used in AS house. The system is still used as an important community building tool inside Loppukiri.

Dissemination

Thematic publications

Remembering and reminding -Exploring practices (2004)

ISBN 951-558-138-9

Editors Taina Rajanti and Andrea Botero

VoiceNotes - Exploring practices through prototypes (2005)

ISBN 978-951-558-223-2

Editor Andrea Botero

Personal and shared -Exploring practices and infrastructures (2006)

ISBN 978-951-558-224-9

Editor. Andrea Botero

Website resources

<http://arki.uiah.fi/adik>

Main communication channel

<http://arki.uiah.fi/adik/dailyworks>

Downloads, demo and documentation of the software

<https://reseda.taik.fi/Taik/jsp/taik/Research.jsp?id=28237>

Documentation and information on TAIK's research database

Seminar/conferences presentations and papers documented

http://arki.uiah.fi/adik/Documents/adik_publicatio-20060203T013158

Graduation works

Joanna Saad-Sulonen : "Mediaattori – Urban Mediator: a hybrid infrastructure for neighbourhoods" Master of Arts in New Media, University of Art and Design Helsinki, May 2005

Available in PDF format here:

<http://www2.uiah.fi/jsaadsu/MAThesis/jsaadsulonen.pdf>

Mika Myller: On the System of Systems Approach to the Development of Everyday Life Applications. Master of science thesis. University of Helsinki
October 2005

Available in PDF format here:

<https://oa.doria.fi/handle/10024/2899>

Hanna Niemi-Hugaerts: "A Whole lot of Fuss about LifeNavigator. A human centered approach to a concept for a mobile application helping individuals to better fit their values and preferences into their everyday life". Master of Arts in New Media, University of Art and Design Helsinki
February 2007

Hanna Katriina Niemi-Hugaerts

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