Digital tools for community building:
Towards community-driven design

Andrea Botero Cabrera   **Iina Oilinki**   **Kari-Hans Kommonen**   **Mariana Salgado**

University of Art and Design Helsinki / Media Lab Department / Arki research group

Hämeentie135c 00560 Helsinki Finland Phone: + 358 9 75630 597

abotero@uiah.fi / iina.oilinki@uiah.fi / khk@uiah.fi / msalgado@uiah.fi

ABSTRACT

This paper describes our participatory design approach with two communities of interest. We discuss the tools and context of conversation and design we have been experimenting with within our research project. The paper presents a working idea of application patterns, as a useful concept for pursuing holistic interpretations of people's needs. We believe that participatory design processes driven by communities, that are developing new ways of solving their needs, might result in the emergence of new and creative applications of future digital technologies.

Keywords

Communities, design partnerships, digital exchanges, interactive scenarios, application patterns, digitalization, digital media participatory design

INTRODUCTION

Besides being a technological direction, digitalization affects everyday life in many concrete ways: processes, media, activities and even objects that appeared with a particular design in the material world, are being redesigned and reconstructed in digital formats (an obvious example is the emergent use of a mobile phone's phonebook as external memory or the fact that a lot of our interactions with institutions, like banks, are now made mainly through network connections). Under such circumstances our everyday life will be affected more by the "systems" that are being designed. We believe that more people need to have a voice in this development. This approach has long been advocated by the participatory design tradition [11], especially in the area of work related technologies, as the Scandinavian approach testifies [4].

. More people engaged with design might help to propose directions that are more responsive to our diversity. As pointed out by critical approaches to technology development, the survival and shift of agency in the decision making process of technology, is not only contested in the social, but can also be affected in the

design process. [5] [12]. However there is still much work to be done when it comes to approaching designs that might support "ordinary" communities doing "ordinary" things. This area remains a largely uncharted territory. One of the problems we have found relates to envisioning with people (ordinary users), issues regarding the new potentials and special qualities that software brings in to the equation. Most of the time people lack vocabulary and concepts to understand how to best take advantage of the possibilities and use them to their benefit

SPECIAL COMMUNITIES: generating partnership

The communities we have been working with display divergent characteristics and allow us to approach the multifaceted problems from many perspectives: various contexts, age groups, media uses, cultures, and values. We want to consider a reciprocal and continuous research that addresses their concerns. In this view design partnerships not only seek to solve problems, but also try to identify problems worth being solved [10]. By facilitating the organisation of activities, the flow of information, their transactions, and empowering them to express their points of view, the communities and we might discover new potentials together.

A community approach moves away from issues that regard only working life, productivity, efficiency, etc. It also helps us to transfer the focus from a "product point of view" and take into account the various social aspects and holistic applications people might have. In the following we will present two communities, who have a very clear goal, an alternative way of doing something and a keen interest in getting there.

Communal living, alternative ways of growing old

Aktiiviset seniorit ry (http://arki.uiah.fi/loppukiri) -Active seniors- is a non-political association founded in the summer of 2000. Its purpose is to develop a new kind housing arrangement for aging citizens based on neighborly and self-help. The idea is to enable a spiritually challenging and socially accomplishing housing in the latter half of one's life. During January 2001 the association got a HITAS (price-regulated) lot from the city of Helsinki in the new housing area of Arabianranta. Loppukiri (Spurt) -as the project for building the house is named- aims at building a strong community. The community will cook and eat and

clean together among other activities. There will be 50 smallish apartments (between 30-70 square meters each), but large common areas, including library, kitchen, dining room, possibly a guestroom and an activity room. Before the actual house exists, they are engaged in finding ways to build an active community out of for the present geographically dispersed group of people. Once their house is in place, new challenges are bound to emerge, to issues like taking care of themselves and sustaining their community.

Nurturing diversity

Mi Casita (http://www.micasita.fi) is an active community founded in 1994 by a group of families, with the purpose of arranging Spanish-speaking daycare services for small children. In Mi Casita both Finnish children and children of Hispanic origin have the opportunity to use and learn Spanish and get to know aspects of different Spanish speaking cultures.

Mi Casita is run by the parents' association; which creates a special relationship between the families involved. It gives them a particular degree of freedom to set their objectives and certain special needs in terms of communication and sharing of resources. Along the way the multicultural aspects also pose challenges and opportunities for interactions and the formation of a strong community.

WORKING METHODS
Contextualizing: - starting dialogues

Rather than assuming a fixed relationship with technology, we are concerned with the kinds of relationships people are interested in having with it. In this sense the contextualization stage concentrates generally on finding connections and identifying relevant applications and patterns (this approach is explained with more details later). We conduct interviews and sometimes use a "light appropriation" of ethnographical methods like participant observation (mainly for the case of children in which interviewing becomes a more complex process). Interviews or sessions are, as usually, videotaped or at least audio recorded. Clips of them are produced, and analyzed afterwards, to gain a common understanding within the group. The material is afterwards shared with the communities, and has proven to be an interesting communicational resource.

Due to the size of the communities, it would be difficult to get extensive interviews with all the members. How to start interacting with as many members of the community as possible, and make them feel part of the process? We have been experimenting with alternative ways of generating dialogue both with the communities and within the community. The starting point has been a series of postcard-like questionnaires and sets of action packs, inspired in particular by the cultural probes approach

developed in the Presence project (European i3 initiative), [7][8]. The cards have been designed to contain a question with an accompanying cartoon-like illustration. The illustration is visually "commenting" the issue, and there is space to fill up the answer. Sets of these cards were given to all the members of the community, they were asked to take them home -time to reflect on the issues- and return them to us in prepaid envelope. As in the original probes approach, answers can remain anonymous.

The action packs contain a series of tasks to be fulfilled in a few days. They range from documenting the use of different media during a particular day, collecting articles and intangible things worth to share with their close networks of people, etc (some of the tasks were suggested by the community itself)

More than pursuing objective answers, the interplay between the illustration and the question, the tasks and the materials given to realize them, aims at provoking and inspiring thoughts around particular issues. These materials have brought up fruitful topics for analysis that are then used in a workshop setting with the participants.

As a concrete by-product, it is clear that it has also been useful information for the community itself, as the simple questions and the tasks have provoked people to think about their relationship to the community.

Digital Exchanges

Both with Mi Casita and with the Active Seniors, we have been designing and implementing community websites. These sites host information they produce and want to provide for the outside world. More importantly it provides a closed (members only) space. This community area contains a set of tools for content creation and exchange. It is also intended to hold a shared memory of the community, works as a communication media, while aiding up in the process of building the community.

This concrete design activity has helped to create rapport and partnership and to test some methods through a very concrete project, addressing the community as a whole. At the same time the design of these spaces enables them and us, to elaborate future directions, since new vocabulary and problematic relevant for other applications and scenarios started to emerge from them. Even though these web sites are important end products for the communities, we feel they are essential tools for research, as participatory design research environments.

Interactive scenarios: building partnership

As tools for conversation we have used scenarios not to tests ready-made concepts but as components in the process of enabling people: first to express their opinions considering digitalisation trends and ICTs [2], and secondly to propose and comment new alternatives and new

concepts.

Scenarios usually envision a situation or a chain of events, often in the form of a story, in which the context, characters and events are depicted both to express and discuss the interaction among people and the design suggestion. It's important to notice though that scenarios are being used in different contexts for different purposes (See for example [4] [9]).

The earlier stages (websites, materials of the cards and the action packs) have brought up different topics suitable to be explored with new scenarios. In order to start the process, we use a set of abstract concepts and three-dimensional elements. This set aims at helping to envision the new scenarios as we go along and to propose new applications while telling a certain story. The pieces represent both the "real world" (people, places, objects) and the "digital world". Roles, spaces, behaviors, qualities, and activities, that are acted out by the elements can change place, illustrate complicated issues and elicit conflicting points. At a certain point in the process one can point out questions like: Who knows/sees this now? Whom I will like to give access to this information? And so on.

These "playing elements" are tried out in a "design session" initially only among the researchers. Here we test the components and play out how a particular imagined application could be achieved. After that, we plan a workshop where we present the basic idea (some context is provided but more in terms of possibilities) to some members of the community and they are encouraged to contribute from their perspective. It seems that presented in this way the scenarios are discussed in a more open way. The different components become a source of inspiration that provoke the people (community members and researchers) to collaborate, participate and design.

Applications and application patterns

A starting point of our research and design is to consciously focus on the things people want to do, achieve or change with the technology – the "application" – and on what kinds of designs and ecosystems of designs can help in realizing these needs.

We use the term "application" to refer to this focus of interest, because we feel it is understood reasonably well by the technology development community, who can easily see that "buying tickets through a web service" is an application of specific information technologies. At the same time, we acknowledge that the term is obscure for many other communities, for example to end users or social scientists. We hope that further work help us to develop a better set of concepts and terms.

As we tried to find ways to describe and classify applications and make our findings useful for development purposes, we came up with the idea of trying to apply the idea of design patterns to the analysis of applications – to search for "application patterns".

The original idea of design patterns comes from the field of architecture [1]. Today it has become a very vivid topic of interest in the software engineering community. In this sense the Design patterns describe patterns of functionality and features that appear in different circumstances and which can be reused in new contexts. We believe that the idea of reusable patterns, which apparently has been found to be useful in describing in a structured but fairly high level way how tools should function, will also be useful for describing how people do things

For the purposes of our work we try to formulate application patterns in terms of identifying different holistic **applications** that a person (or community) is interested in achieving. For example "being informed about the latest news" can be considered an application. In order to fulfil this need or interest, someone will make use of different **patterns.** For instance: she will watch the 8 p.m. news, or listen to the radio on her way home, maybe she discusses the news with another person, maybe she even uses a combination of all. These possibilities can be considered the different patterns that form up an application pattern. In such a structure a pattern can make up or be part of different applications, and possibly become reusable components.

By identifying interesting applications in the communities we want to study, which components and aspects they find important? What other patterns could they use and how? These aspects are important for us because we would like to find ways to separate the more general "application" (being informed about the latest news) from the more specific patterns (8 p.m. news at home and the other possibilities) and from the different solutions and tools available for the same application (watching news from TV or reading a newspaper).

This distinction might help us to distance the discussion from the specific features of the technology or tools to a slightly more abstracted and thus higher level, and focus more on the reasons and qualities that relate to choosing between alternative possibilities. Another benefit we hope to achieve with this is to make space in the discussion for the new features and characteristics of future tools that we cannot show or experience yet.

APPLICATION PATTERNS APPLIED TO A CASE:
Changing patterns of growing old, Active senior community

The lengthened amount of expected active years after retirement (called the third age) and the simultaneous crisis in state-led senior care have brought up questions about

alternative ways of "growing old". The active seniors of our case excellently project the desires as well as the fears of what it is to deal with these questions. In taking the matters into their own hands, the active seniors are pursuing both a more independent but also a truly communal way of growing old. Zygmunt Bauman [3] has predicted that the state will lose some of its powerful position and the society's importance will continuously diminish. He sees grassroots communities as the vehicle for creating more options to the prevailing supply. These imagined communities, habitats, based on voluntary affiliations, which are negotiated continuously, form the postmodern society. Affiliation is produced by adopting symbolic markers, which are continuously searched for and adopted if a certain guarantee is granted (ensured by experts or popular by massive adaptation) New forms of social collectivity are taking root, which challenge our established modes of politics and tradition [10]. These communities are not usually authorized by the large quantity of members and not necessarily by durable goals (and they are fragile in this sense) [3], but they are cultures of sentiment and aestheticisation, which Michel Maffesoli argues are 'trans-political', distinctly disengaged from the political and returning to 'local ethics', or an 'empathetic sociality'. [10]

The idea of a new kind of senior housing (of the active seniors) was born in leisurely meetings among a couple of old friends. In the beginning the discussion circled around a more friendly (or fun), secure and humane place to spend one's retirement than what can be offered by the institutionalized senior homes or the (lonely) apartment far away from friends and family. The project has then inspired many more and has generated a lot of media coverage. The interest lies especially in the alternative, communal living arrangements for senior citizens.

Themes essential to senior care have been listed below and then linked to the idea of application patterns. The suggestion is to combine the different elements (security, community, nurture, independence, fragility = the applications themes) that are important to a holistic senior care, with the various possible (digital) schemas of how to address them (=patterns), and the objective that we try to reach in developing shared design tools (community driven design).

Here the issues are presented on a rough level, though a more detailed level is possible once the elements are more specified.

Community - In the case of the active seniors, the process seems to encompass two phases, the time before the house is built which is limited; and then the time of living in the house. In the first phase the different patterns should aim at shaping, strengthening and pluralizing the community. At this point even basic web-based tools are of a great support. A portal or an equivalent, a gathering place for a geographically spread out community, making the unknown known and trustworthy.

A place where discussions, opinions, plans and (dis) agreements are maintained, creating history for the community. The problem (the application) then can be stated as how is a spread out community created? Bringing forth the elements needed for it's localized sequel. The pattern (although there are several others, like regular meetings, community-workshops, trips) here revolves around the web-based tools.

Nurture - In the second phase the community will have formed and the digital tools should facilitate everyday life. Simple but critical issues like automating and remembering systems - the application- can help routines. A shared memory for the community remembers the personal and the common, the practical and the abstract. It keeps track of the relationships with outsiders (producers of needed goods, cooperative partners, maintenance teams, building companies). The questions inherent in these relationships: Who knows whom? Who can you trust to take care of your things? Where to buy the best or cheapest produce? And the solutions to these questions form the bonds and the many-layered digital networks. Digital networks allow cooperation that is not based on physical proximity (an obstacle for some), but will nonetheless enable working relationships and produce new ways of collaboration in the neighborhoods and other localities. The application here being: how does a group of individuals get through an average day in the web of interactions and routines.

Security A lot of special questions arise from the fact that this is a house designed for aging residents (taking care of themselves). From our earlier studies we know that the questions about security create a lot of polemic. How much surveillance does people want? Who does it? Who's allowed to watch? The users define the boundaries between private and public - they should be able to create the application and have the power to exercise such decisions in very flexible ways, under their own control. , I t has also become evident that the application cannot be solved by a single "product" but by the interrelations of diverse components in an ecosystem.

Independence Questions about independence are related to both the community and the age. How can independence be aided in old age? Digital systems allow various different versions of publicity in various matters and varied personal solutions. Although the community will make some joint decisions, all the individuals have to consider their perception of the private/public dichotomy in the community.

Fragility (mental and physical) A digital system can hold

personal recollections, memories recorded and recommendations from friends as well as it can be the place where documents of the highlights of the communal life are posted. By digitally enabling them to remember (both by recording memories and developing reminders) and assisting them on the routines of everyday health issues, some of the obstacles to living at home are conquered. Such possibilities have become more visible when the scenarios are played out in an open way with the pieces during the sessions. .

CONCLUSIONS

This has been an approach to describe the goals, methods and working examples of our current work. A lot of the concepts and ideas are very much under construction, therefore this should be considered more like an introduction to the themes we are working with than an actual report of results.

Our purpose is to generate design within collaborative work with communities through long-term relationships and mutual commitments. This creates a need for developing methods that support and produce ways of enabling the production of ideas. It seems that people are interested in discussing areas in which they have personal interest. For this reason the discussion process should be such that it supports an open exchange of ideas. The communities take an interest in influencing the possible designs if they feel like their opinions matter, if they think that they are an integral part of the process. Provided that they feel inspired, see a connection to their everyday life experience and find productive ways of communicating, ideas start to emerge. We have been gladly surprised by the amount of ideas that the sessions are generating. Identifying a convenient level of discussion remains a central point in both the contextual stages as well as in the design sessions.

The context has helped to identify the multidimensionality of the issues that need to be addressed. There is a clear need for a reflective atmosphere. In this sense the scenarios should support ways of emphasising both their positive and negative possibilities in order to discuss the trade-offs. We hope to continue developing the idea of the application patterns as a focus to help us avoid concentrating only on devices.

We still need to experiment with ways and formats to avoid relying on people's predefined ideas about what technology can do. Short-term pilots and more concrete prototypes are the next step to create more inspiration and produce more spaces for dialogue.

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