

Ethnographic techniques with older people at intermediate stages of product development

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ABSTRACT

In this paper, we argue that ethnographic techniques such as immersion and simulation, using unfinished versions of products or services, either digital or non-digital ones, conducted in activities which are meaningful for older people (60+), help us include their opinions about and attitudes towards products or services at intermediate stages of their development. We present how we used these techniques in the design of a digital game and a mutual help online service with and for older people, and discuss the main lessons learned from these experiences.

Keywords

Ethnography, older people, intermediate product development stages.

INTRODUCTION

A well-known tenet of user-centered design is to involve end-users throughout the design of interactive technologies. However, in research and development (R&D) projects, this principle often becomes a paradox, since involving end-users when ‘there is nothing to show them’ is considered difficult, and when there are prototypes, usually quite detailed, which can be evaluated with them, it is costly to change the course of the technical development [1]. Furthermore, agile methods [1], which are increasingly being conducted in the industry, require new techniques for involving end-users in shorter production times and cycles.

We have been researching into how to address this paradox at the intermediate stages of R&D projects. By intermediate stages we mean the period between idea or concept generation and the first stable version of a product or service.

Whilst numerous efforts have been made to involve end-users in the requirement analysis and at initial stages of the design process [7], [3], as well as in final phases, mostly related to summative or formative evaluation, much less is known about their involvement at intermediate stages, when numerous design decisions are made. This is the focus of this paper.

We have been conducting ethnographical techniques, inspired by concurrent ethnography [6], to get end-users involved in both generating further design ideas and

identifying and solving technical implementation issues, which often appear at intermediate stages. An ethnographical approach requires understanding a problem ‘from within’, i.e. everyday activities which are meaningful for end-users and performed in real-life settings. This approach provides us with the opportunity to realize what people actually do, beyond what they say they do or actually do in more formal settings, e.g. meeting rooms. We have been exploring ethnographical techniques in two R&D projects, and we present them together with the main lessons learned.

RELATED WORK

Co-design with older people

Uzor *et al* [8] claim that “seniors are an integral part of the design process and should be directly involved from the concept stages of the design of tools” (p. 1179). They conducted two workshops (one with 7 and another with 8 older people) during the idea generation phase, which involved discussions about a problem, scenarios and personas related to it. The participants played games which addressed their concerns and interests, and also sketched new game ideas during the workshops. Vines *et al* [9] used “questionable concept cards” (p. 1170) of imaginary bank products to elicit criticism about bank services with over eighty older people, and stated that “this critical stance not only helped to identify product needs but also to motivate design innovation” (p. 1171). These are two recent examples of co-design studies with older people, most of them conducted at early stages of the design process so as to define implications for design or for generating design concepts.

Ethnography and Co-design

Dourish [3] in his classical study argues that the main virtue of ethnography in HCI goes beyond a set of implications for design. However, it does not address how to extend ethnography in different phases of product development.

Hughes *et al*. [6] conducted an interesting review looking at the different roles that ethnography can take in HCI, ranging from motivation and idea generation to evaluation, without providing concrete ethnographical techniques suited to these roles, which we explore at intermediate stages of the design process, beyond classical ethnography as a methodology [5].

KEY ASPECTS OF OUR ONGOING STUDY

We have been working with older people (60+) in two ongoing R&D projects. The *Life2.0* project is partially supported by the European Commission and aims to

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develop geographical positioning services to support independent living and social interaction amongst older people and their social circles (<http://www.life2project.eu/>). The *Worthplay* project is funded by FGCSIC and aims to understand and develop digital games which encourage active and positive ageing (<http://worthplay.upf.edu/>). In both projects, we are looking into the accessibility and use of touch devices (e.g. iPads) by older people.

Participants

We have been conducting our research in Àgora, a highly participatory adult community school in La Verneda-St. Martí neighborhood (Barcelona, Spain). We worked with older participants (60+), mostly enrolled in ICT courses organized in Àgora. 20 of them were interested in using the mutual help service of *Life2.0* and participated in its development. Around 70 were involved in research activities conducted in *Worthplay*.

ETHNOGRAPHICAL TECHNIQUES

We consider that conducting observations while being immersed in real-life contexts, and in more concrete meaningful activities for the lives of the people under study, are core aspects of ethnographic techniques, and ours center more on the latter one.

We conceived meaningful activities by following a happiness-driven design strategy [2], i.e. involving older people's talents and skills, respecting their personal values, making activities enjoyable, and offering them the opportunity to contribute to them.

As our ethnographical research took place in an adult school, we designed activities supporting its goals and the interests of the participants. Thus, the research activities conducted were part of their everyday learning activities at the school.

Ethically, the participants were informed that we were carrying out R&D projects and we would use the activities to understand how to create better technologies for them (they signed a consent form). Specifically, they were informed that we would be observing what they were doing, in addition to taking pictures and notes, to be used in the project. At the end of every activity, we conducted informal interviews or assessment sessions to validate our observations.

We conducted *conceptual* activities, which aimed to identify key aspects to consider in the product development, e.g. look & feel and guidelines, and *feedback* activities, to gather their opinions on specific outputs of the development process, such as simulations of using unfinished versions of products or services in real-life scenarios.

Conceptual activities

The key technique we used to understand participants' point of view has been *immersion*. In both projects, we immersed ourselves in meaningful activities which were both conducted in Àgora and related to the projects. For instance, we immersed ourselves in a mutual help group

where older people could exchange help among themselves to inform the design the mutual help tool of the *Life 2.0* project, or in a Game Club in *Worthplay*. (See Figure 1)



Figure 1: Mutual help in a face-to-face session.

Feedback activities

Feedback was collected by using uncompleted versions (i.e. digital or not) of products and services in simulation sessions conducted within the context of activities which made sense for our participants.

We conducted simulation activities to validate a model proposed, before implementing it. For example, we played face-to-face games drawing on the model proposed for *Worthplay*. We used a paper map to present the activities of a game and to have one person involved in their validation, i.e. whether the activities were achieved, and, if so, to give points (stickers on the participants' clothes) to those who had solved an activity. (See Figure 2)



Figure 2: Co-design session, face-to-face playing.

We increased the 'meaningfulness' of uncompleted versions of *Life 2.0* services supplementing them with face-to-face simulation. Participants of the mutual help group used uncompleted versions of *Life2.0* in their real-life context. For example, at some point the system included the option post offers, and search for offers. However, it did not have the option to make contact with the authors of other offers. Thus, since they knew each other, and they were doing the activity in the same place, they used face to

face contact to exchange services. In the same way, we used uncompleted versions of the system as it was growing. We also used other conventional techniques, such as focus groups, interviews and usability tests (see figure 3), whose results will be compared with the ethnographic ones in a later section.

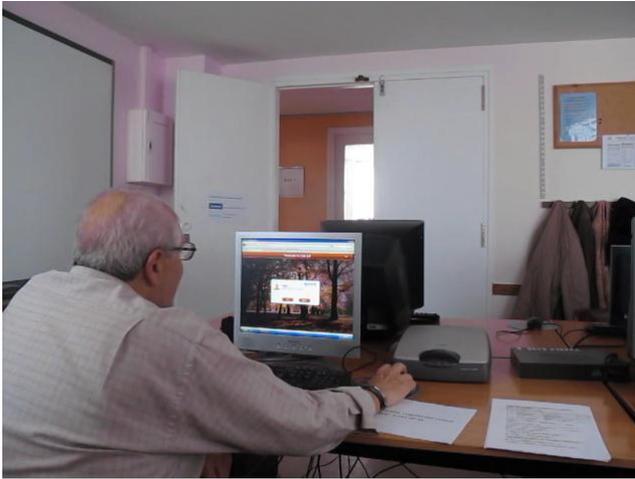


Figure 3: User conducting a usability test in the Life 2.0 project.

MAIN LESSONS LEARNED

Ethnographical techniques allow us to sustain critical participation

Whilst receiving constructive criticisms at intermediate stages is crucial in improving the product or service being developed, our participants found it difficult to take a critical attitude (i.e. feeling comfortable enough to point out faults in the design and contribute with their own ideas) during focus groups or usability tests because: (i) it was impossible for them to understand the complete flow of information since they could not use the products or services in real-life, meaningful activities, (ii) they wanted to be kind and polite with the researchers, who they regarded as experts, (iii) they considered that their problems were due to a lack of experience with the technology: “*I just have to learn how it works*”. To overcome the difficulties in promoting critical attitudes amongst older people with conventional techniques, the following strategies, which we have applied in these two R&D projects, have been facilitated by the ethnographic immersion of the researchers:

- Involving highly motivated participants in the topic of the project and promoting their commitment to it, as in users as design partners and not just informants. [4].
- Keeping participants abreast of the project throughout its development, e.g. showing them how the project used the results of the activities in which they took part to improve the product or service.
- Proposing problem-solving activities, i.e. when they identified problems, we encouraged them to suggest ideas to solve them. This made them feel that they

were making valuable contributions, contrary to stereotypes, e.g. ‘older people have nothing to contribute to technology’.

Meaningful activities elicit spontaneous participation

Meaningful activities for our participants helped us to overcome the tension between researchers and participants. Whilst most of today’s older people are not used to taking part in R&D activities, since ICT have largely been designed without involving them at design or development stages, meaningful activities increased their engagement and contribution to the design process.

Meaningful activities lead to rich and focused discussion on a topic

We designed each conceptual or feedback activity to address one research question at a time, and, at the end of the activity, we asked our participants about the research question. We consider that this was motivated by the fact that they had had *recent* real-life experiences that contributed to minimize the abstraction of the research question, facilitating the discussion. In this way, we could also triangulate our observations with their opinions and perceptions.

Ethnographical techniques can sensitize project partners to the needs and interests of their end-users

Whereas it is natural for all project partners to bring their own personal ideas about the users in the development of a project [4], these ideas are often limited to personal experiences. Ethnographic techniques provide a rich scientific grounding and are useful to sensitize the members of the team to the real needs of the end-users. Beyond the concrete ideas that emerge from informal conversations between ethnographers and end-users, we observed that other project partners, especially those with a technical background, who agreed on participating in co-design sessions, were more willing to put the user’s point of view first in the every day decisions of the project development than those who had not had participated in the activities using the ethnographical techniques outlined before.

Ethnographical techniques reduce abstraction when using uncompleted versions of products or services

Focus groups or usability tests designed to discuss and evaluate initial or uncompleted versions of products or services are not enough to understand how useful the designs are. These discussions require a certain level of abstraction, which was a barrier for our participants, since they had to make the effort to infer how they would use it in real-life situations. By contrast, using the same version of the product or service in simulation activities, where they have to ‘use’ it in a real-life situations, allowed them to experience the technology and to make suggestions for improving it. By observing how our participants used the *Life2.0* services, we realized that some interface elements that they regarded as clear during usability tests were difficult to understand and use.

CONCLUSIONS AND ONGOING RESEARCH ACTIVITIES

In this paper, we have argued for using ethnographical techniques to include older people’s point of view at

intermediate stages of product and service development. We have presented immersion and simulation techniques, which center on observing older people within meaningful activities for them. We provided examples of how we did so in designing a digital game and geographical-based services with and for older people in two R&D projects. The lessons learned so far show that ethnographical techniques at intermediate stages can potentially lead to the creation of better, more accessible, useful and pleasant-to-use products and services for older people.

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