CO-DESIGNING THE PARTICIPATION ECOLOGY

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ABSTRACT

This paper describes the design case of Wijchen Gezond. A participatory design project has been set up by a civil initiative which aspires Wijchen to become the 'healthiest' town of the Netherlands. We describe the design vision, design approach and first experiences designing in –and with- Wijchen. Moreover we reflect on the challenges we meet in appropriating participatory design techniques for large scale communities.

INTRODUCTION

Within this paper we discuss our participatory design efforts in the case of *Wijchen Gezond* (Healthy Wijchen). In Wijchen, a Dutch town of 41.000 citizens, a civil initiative has put forward the goal to become the healthiest city of the Netherlands by 2018. As a part of their program Wijchen Gezond plans to create a physical and online lifestyle center, to support citizens in healthy a lifestyle. Our university is involved in designing this online lifestyle center.

The design canvas is wide open in this project: there are hardly any articulated ideas about the form this digital lifestyle center should take. It could be a website with information about a healthy lifestyle, or it could take other forms such as persuasive apps, an online community or even environmental media like screens in shops might be part of the solution. Nevertheless the ambitions are high. Two goals have been set for the center. First: the online lifestyle centre should contribute to the health of the population of Wijchen and second after one year about 40% of the population of Wijchen should have visited the online center.

The total time of the project is one and a half years, but this paper focusses on our design process in Wijchen in the first half year. Although we will describe our vision and approach, we take the challenges involved in participatory design in such a large scale community as primary focal point of our reflections. In this paper we will first focus on our general design vision for the project. This shaped our design approach which we will describe next. Following this we describe our experiences in the first half year in Wijchen. We end the paper with a reflection and future work.

DESIGN VISION

The civil initiative in Wijchen would like to persuade the inhabitants of Wijchen, in all its diversity, to adopt a healthier lifestyle. The possibility of using technology to persuade people to change their lives for the better has ignited a substantial body of work in the past decade. However, the typical approach to persuasion has been to design highly targeted, relatively short term, interventions on specific behaviours, as recommended in early work on persuasion (Fogg, 2002). Typically dyadic relationship is presupposed: with the technology as a persuader and the user as persuadee (Oinas-Kukkonen & Harjumaa, 2008). This classic approach towards persuasion has been criticized as overly modernistic (Brynjarsdóttir et. al., 2012) and only modestly effective considering the complex, long-term processes with high relapse rates that drive behaviour change (Klasnja et al., 2011).

We propose a shift in thinking of persuasion in which we built on Fisher's (2011) work on cultures of participation. Following an analysis of open source socio-technical systems such as Wikipedia and Instructables, Fisher puts forward the notion of a *participation ecology* as a socio-technical system in which users can have (1) a variety of roles, (2) performing small tasks, which are (3) scaffolded in the system to contribute to a larger whole. Jeurens (2014a, 2014b) has recently shown how this frame of thinking can lead to innovative solutions in the case of family involvement in elderly care. We envision persuasive participation ecologies as sociotechnical systems which support a wide range of users, with different persuasion needs, to support each other in their needs. Persuasion mechanism such as found in traditional work on persuasion may be implemented in pesuasice participation ecologies, but they should not be the focus of the design efforts (van Turnhout et al. 2015). In other

words: the system should not act as a persuader as much as it should take the role of facilitator empowering the citizens to persuade each other. This vision may alleviate the critiques by (Brynjarsdóttir et al., 2012) and (Klasnja et al.,2011) to some extent.

DESIGN APPROACH

Following our reframing of the problem of persuasion, we set up an approach informed by the tradition of participatory design (e.g. Simonsen & Robertson 2012). We involve users not only to inform the design, but also to raise support for the new system. In the case of Wijchen Gezond this means finding a broad set of ambassadors in the village, preferably including citizens on the outskirts of the network of the group who started the civil initiative, and supporting their latent needs within the digital lifestyle center.

As a general way to structure our project we have chosen to use the 1:10:100 approach (van Turnhout et al., 2013). This was originally developed to tackle the complexity of 'wicked' design problems, but also turns out to be a helpful means to organize requirements-oriented project conversations with heterogeneous groups of innovation partners. The idea is do the project three times with increasing timespans (in its textbook form 1, 10 and 100 days). Between the iterations, a provocative prototype (Boer & Donovan, 2012; Mogensen 1992) is presented to the innovation partners in a so called 'quality review board' (QRB). In these QRB sessions, the intermediate designs are discussed as if they were the end result. These counterfactual conversations are considered inspirational by the partners, who tend to become more open to unexpected solutions, while a clear picture of the underlying values of each partner still emerges. The process is design-led and participatory, as during each QRB, the partners jointly set a new research and design focus for the next iteration.

The 1:10:100 is a meta-method: within its iterations any type of user-centered design process can be used (van Turnhout et al., 2013). We have chosen to work with traditional interviews in the first (1) iteration and co-design sessions using a design game (Brandt 2006), called the 'handshakes game' in the second (10) iteration. These two iterations are the focus of this paper. Future work involves a technology probe study in the (100) iteration, which we shortly discuss near the end of the paper

The civil initiative in Wijchen is organized hierarchically in a board which is represented by healthcare professionals (healthcare institutes and a local general practitioner and pharmacist), as well as civilians with an enthusiastic interest in healthy lifestyle and four groups who are engaged in organizing activities for one of the four 'cornerstones' of healthy living ('responsible diet', 'exercise', 'reflection and passion' and 'network').We have executed the QRB sessions, which are part of the 1:10:100 method with the

board, and the co-creation sessions with the four groups leading the different cornerstones of the initiative. In the remainder of this paper we will first report on the co-creation sessions with the handshake game (which was executed in the 10 iteration) and next we will discuss the results of the QRB of the 1 and 10 iteration.

THE HANDSHAKES DESIGN GAME

DESIGN

Brandt (2006) defines design games as activities which accommodate people with various competencies and interests in staging a design process. Design games share the process of 'make believe' with games but their end goal is co-creation of design opportunities, not fun. Our design game aimed to reveal the context needed to design a persuasive participation ecology. In particular we wanted to find opportunities for the citizens in Wijchen to persuade each other in adopting an healthier lifestyle, through the system. Therefore we tried to engage the participants of our co-design workshops in conversations about how their social network supports a healthy lifestyle and how this could be improved.

For this we invented the concept of a *handshake*. The idea is to redesign those moments when different stakeholders are in touch with each other. For example when an elderly citizen discusses his health with the doctor (being handshake between a doctor and citizen) or when some visits yoga practice (being a handshake between an entrepreneur and a citizen). The design game tried to prompt participants into identifying such handshakes and to stimulate them to envision alternatives when a system like ours would be brought in.

Figure 1: The cards of the handshake game

During the session, participants can connect several types of cards in a 'domino-style'. Everyone draws random the top card of a category (persona, location/moment, behavioral, technology) and attempts to connect it with what is already on the board by relating it to their personal experiences. The back of each card has examples or categories which could inspire the participants in relating it to their personal experience. If a participant draws a persona card for example, he can chose an actor which can be added to the network, effectively defining a handshake which

could be supported through the system. When the participant picks a teacher he can draw connections to other cards such as a location 'school' and a persona 'child'. For the participants the goal of the design game is to complete a network by connecting a persona with a target behavior. In doing so participants of the session create a rich and contextualized story around how citizens can persuade each other into a healthy lifestyle.

EVALUATION

Overall the results of the four design-game sessions were disappointing. Although the games were meant to gain insight into the personal context of the lives of the participants, involving healthy lifestyle, it turned out to be hard to get the participants to talk about their own experiences regarding health. As members of the civil initiatives they steered the discussion towards health in general and they presented third person views on how health could be improved in Wijchen. As such our goal to obtain concrete contextual data was not met. Also, the participants had trouble understanding that the game was merely a tool in voicing personal experiences and revealing potential handshakes, rather than a way to create a perfect or viable persuasive solution. During the sessions the moderator solved this mismatch of expectations by taking a step back and asked more general research questions in order to gain insights into user needs and possible opportunities and potential obstacles.

QRB – SESSIONS

DESIGNS AND OUTCOMES

Two QRB sessions were executed. In the first session the results from the '1 cycle' were presented. Talks with Wijchen citizens and members of the Wijchen Gezond foundation led to a framing of three areas of particular importance: (1) community, (2) visibility and (3) daily routine. An 'exercise pillar' was presented as a provocative concept. The physical exercise pillar would show where things regarding healthy lifestyle are taking place, and allows for relevant follow-up information by NFC/smartphones. This concept was mainly presented to challenge possible existing views of the online lifestyle centre of as a website with health information.

The second QRB session took place after the four co-creative sessions with design games described earlier. Based on the discussions during the workshop and the answers to generic questions after the game we based our concepts on the following areas of interest (1) self-monitoring (2) other-monitoring (3) self-articulation (4) social scaffolding and (5) self-informing. Three concepts were presented including ideas for further development. Among the concepts presented were apps that allowed community discussion from context, group scoring, contribution applications and personal confrontations of information and one's lifestyle behaviour.

EVALUATION

Despite the enthusiasm in the quality review board around the concepts we felt the goal of a QRB as a way to bring gradual focus to the design was not met. The feedback in the first session on the concept was unanimously positive, although different members of the board would respond to different aspects of the concept. Some liked the idea of a catalyst for follow-up behaviour, while others commented specifically on its physical presence, mobility and flexibility in putting it to use. The overwhelmingly positive feedback proved to be a bit of a problem, because the concept itself was dominating the discussion, instead of the underlying assumptions which the concept was based on. Such abstract discussion proved difficult for the members of the QRB, who had no particular background in design or concept development.

In order to cater more to the audience in the second session, more abstract concepts were presented, in hopes of enabling discussion about the underlying assumptions of the concepts other than just the implications of the concept itself. In the discussions it became clear that although not everyone liked the same things, pretty much every aspect of the concepts was evaluated as potentially viable. It was concluded that the final solution should incorporate many different aspects in order to be useful to the intended audience (some like this; the central argument being that everyone needs a different approach).

DISCUSSION

The first phase of the 'Wijchen Gezond' case has been more difficult than expected. The civil initiative is a well-organized, open minded group of people which is very involved with the case of making Wijchen an healthier place. Working with this group of people has many benefits but also some pitfalls. We believe the co-design sessions of the '10' iteration may have been disappointing in part *because of* the ambassador role of the participants.

Involving ambassadors was crucial for raising early support for the system but their involvement with the project had disadvantages for their role as informants. Tomico et. al. (2012) recommend switching between three perspectives in the design of interactive systems. The first perspective, reasoning from own experience, the second perspective designing with people and the third perspective designing for people in an abstracted way. The handshake game was developed to have a conversation from a first person perspective with these people, but as ambassadors for the group the participants were used to reason from a third person perspective (e.g. "the health of the people of Wijchen" rather than my "health"). This mismatch may in part have caused the difficulties with the handshake game.

A second problem may have been a lack of diversity of our groups. Schepers et. al. (2014) make a distinction between two levels of diversity (1) the composition of

the participating groups (homogenous or heterogeneous) and (2) the differences in viewpoints on the addressed topics (consensus or conflict). Although we have paid attention to the first type of diversity, it may have been that in terms of sampling the community of Wijchen at large these ambassador groups have been to homogeneous. The second type of diversity was certainly lacking as these groups were working with each other on this topic for some time.

As we feel the design process has not progressed sufficiently we are faced with a tradeoff between our goal of raising support in the community and our goal of gathering user insights that could drive design. In terms of user insights we reach a broader and more heterogeneous sample of participants which can give us more concrete viewpoints on supporting 'health handshakes'. From the perspective of raising support in the community we need to take care to build on the input and intermediate QRB results sufficiently not to alienate the representatives in the civil initiative from the design.

We are planning to do this by creating a technology probe Hutchinson et al. (2003) and testing this in a larger part of Wijchen. Technology probes are flexible pieces of technology which can be appropriated in several ways and as such give insights about possibilities trough the different uses emerging from them. As such they can be used as tool in transformative design research (van Turnhout et. al. 2014). By basing the design of the probe on the results of the last QRB we can maintain a continuous line in the project, while giving us some space for additional research at the same time.

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