Chapter 5.8

Future Living in a Participatory Way

Laurence Claeys
Alcatel-Lucent Bell Labs, Belgium

Johan Criel
Alcatel-Lucent Bell Labs, Belgium

ABSTRACT

This chapter introduces the concept of critical user participation as a means to see the socio-technical gap in context aware applications as an opportunity rather then a problem space. It argues that for context aware applications to get integrated in everyday life, the principles of critical user participation as defined in this chapter must be fulfilled. In the first part of the chapter the authors scrutinize the concepts of "context" and "participation" and argue why critical user participation principles should be fulfilled when developing and interacting with context aware applications. The second part consists of an empirical study on the existing vision and context aware applications of the "homes of the future" in Belgium and the Netherlands. In the conclusions a reflection is made upon the opportunities of the socio-technical gap to empower the users of context aware applications.

We are responsible for the world in which we live not because it is an arbitrary construction of our choosing, but because it is sedimented out of particular practices that we have a role in shaping.
—Karen Barad (1998 p. 102)

INTRODUCTION

Imagine you live in a context aware house that reacts on you and the environment you live in. When you wake up lights automatically switch

on and curtains open. Standing in front of the bathroom mirror when brushing your teeth in the morning, a shopping list of things you need to buy today is displayed based on what is in your fridge. When entering the kitchen you smell the coffee that is ready. The door locks automatically when you leave the house and when coming home in the evening the song that corresponds with your current mood and day activities is playing and your house is warm because the central heating was switched on one hour before you entered the house so that it had your preferred temperature.

The ideal situation: an invisible, personalized, adaptive and anticipatory house that mediates social interaction between you and your environment. It seems perfect to let boring routines be carried out by a system. But how will the context aware house act when you are sick and want to stay in bed? And will you be able to get coffee even if you don't have brushed your teeth, or get coffee for two when somebody stayed overnight?

Different authors (e.g. Weiser, 1991) already predicted these moral questions long time ago. Technically a lot can nowadays be realized that works very well in a lab environment. The behavior of context aware houses can be defined as a set of rules, each formulated as actions that are executed when certain conditions are met. Rules in computer programs, however, become more on more complex and are most often hidden to the users. Although technologically context aware houses can be realized, why aren't they used frequently in everyday life? Is it because they are too expensive to install? Is it because it's all about rather useless luxury applications? Maybe, but the embedded vision on 'context' within the application and the vision on 'participation' when developing applications seem also to be part of the problem.

From above examples we can distillate two important observations, typical for context aware applications. First, the issue that the vision on context awareness is very much technological driven and often do not take into account the meaning of

context for the person that acts in his or her own environment. But context isn't something that describes a setting; it's something that people do, the horizon within which the user makes sense of the world (Heidegger, 1927). Therefore context cannot be defined as a fixed set of characteristics. Second, context awareness seems to imply loose of control for the person concerned. In contradiction to almost all other applications, typically for context awareness is that there is no need 'to give authorization to do this or that'. Issues as privacy, autonomy and control frequently don't seem to be implicated. Users often don't have impact on the feedback loop (Crutzen, 2005a).

We believe that these issues are an important part of the explanation for the only very slowly integration of context aware applications in everyday life. The explanation for this could lie in the difference between what society wants and what technology does, or between social requirements and technical feasibility (e.g. Ackerman, 2000). We try to define the problem in another way because we believe that technology and society could never be 'matched totally' before the adoption process starts. We consider the socio-technical gap not as a problem but as a reality. The gap implies opportunities for co-construction and diversification for the development of context aware applications.

We propose to take the 'best' out of both worlds by introducing the concept of 'critical user participation' going back to the original meaning of user participation the Participatory Design movement attached to it, namely the issue of power and its distribution (Beck, 2001).

This chapter starts with a theoretical exposure on user participation, context and context awareness, where after we link these concepts together to describe some principles in the way software has to be developed. Thereafter we present in the empirical part of the article our study on the future ambient living vision that is shown in the existing future living homes in Belgium and the Netherlands. In this study we analyzed how far

Related Content

Evaluating Computer Games for the Professional Development of Teachers: The Case of Atlantis Remixed
Hakan Tüzün, Tansel Tepe, Tülay Dargut Güler, Fatih Özerand Volkan Uluçnar (2017). *International Journal of Virtual and Augmented Reality (pp. 60-74).*
www.irma-international.org/article/evaluating-computer-games-for-the-professional-development-of-teachers/188481

Sixth Sense Technology: Advances in HCI as We Approach 2020
Zeenat AlKassimand Nader Mohamed (2017). *International Journal of Virtual and Augmented Reality (pp. 18-41).*
www.irma-international.org/article/sixth-sense-technology/188479

Framework for Stress Detection Using Thermal Signature
S. Vasavi, P. Neeharica, M. Poojithaand T. Harika (2018). *International Journal of Virtual and Augmented Reality (pp. 1-25).*
www.irma-international.org/article/framework-for-stress-detection-using-thermal-signature/214986

Seeking Accessible Physiological Metrics to Detect Cybersickness in VR
Takurou Magakiand Michael Vallance (2020). *International Journal of Virtual and Augmented Reality (pp. 1-18).*
www.irma-international.org/article/seeking-accessible-physiological-metrics-to-detect-cybersickness-in-vr/262621

Toward an Understanding of Online Community Participation through Narrative Network Analysis
Michael R. Weeks (2012). *Virtual Community Participation and Motivation: Cross-Disciplinary Theories (pp. 90-102).*
www.irma-international.org/chapter/toward-understanding-online-community-participation/66897