Chapter 17

Asymmetrical Learning Create and Sustain Users' Drive to Innovate, When Involved in Information Systems Design

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ABSTRACT

We describe a case of development of an interface to online feedback on electricity consumption designed for private households. The development process was planned and executed in line with traditions of participatory design and Scandinavian systems design: inviting selected users to take the lead as much as possible by introducing a design space and design artifacts in their home environment, and gradually, in a sequence of three events unfolding over a month, drawing their attention to possible futures. Our reflection on this case makes us suggest a couple of central principles of user involvement and user engagement, in short 'the user drive'. We emphasize mutually asymmetrical partnership comprising knowing, artifacts, and dedicated space: users knowing the setting of use, designers knowing technological possibilities, the design artifacts which stages user imagination and serve as a boundary object of communication between designers and users, and the dedicated space of imagination, which in our case had the form of a time- and story-line running from observing own home to innovating present ways of knowing about electricity consumption.

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INTRODUCTION

Research in Human-Computer Interaction suggests that humans attribute a variety of meanings to human-artifact-relationships (Bødker & Bøgh Andersen, 2005), one of which being humans and artifacts as nodes in a system with the human actor conforming to the rules of the artifacts of the system, another being humans holding the artifact as a tool, which expands capabilities and agency. In this chapter we focus on the human-artifact relationship of the tool-type, and the *innovative* space around it. As case in point we present and discuss the outcome of an instance of user-driven innovation, where we as designer-researchers worked with eight families on developing interaction concepts for feedback about electricity consumption of private households. In order to identify, evoke and work with these families on innovation, we had to consider the relationship between designer and user: how do designers conceptualize users?

The 'user discourse' has, since the first steps to include users in the design process of computerized Information Systems in the 1970s, gradually changed: from "victims" needing support in the 1970s (Bansler, 1987) to "competent practitioners" in the 1980s (Greenbaum & Kyng, 1991), to "serious professionals" in the 1990s (Nardi, 1993), to a present valuable "source of inspiration" (Gaver, 2001) or "developers with a recipe" (Aaen, 2003). These various discourses can be regarded as an increase in user significance primarily from a business perspective, where users are regarded as an irreplaceable source of inspiration for innovation along with the market conditions set by "new economy" (Kelly, 1999). In reflections on "Design Research in 2006", Sanders (2006) describes this increasing interest in users as a result of failed innovation in the years 1999-2001: "innovation that was not relevant, not people-centered and ultimately not useful, e.g., the many failed products and services of the dot-com era" (Sanders,

2006). Consequently, a search has been set out for "truly people-centered innovation" (Sanders, 2006), and the concept user-driven innovation has gained increasing attention in systems design.

The term user-driven innovation is, however, not new. It was coined by C. Freeman, who in the 1960s used it as part of his theory of democratic production processes (Freeman, 1968). In the same period von Hippel presented the term "user dominated innovation" (von Hippel, 1976), making the same point as Freeman: users can play a valuable innovative role for product development. Von Hippel's ideas are today realized in production processes and tool-kits to support lead-users' "real freedom to innovate" (von Hippel, 2001).

Since the new millennium, the term user-driven innovation has entered the research field of Scandinavian systems design (e.g. Bødker, Kensing & Simonsen, 2008; Buur, 2008; Kanstrup & Christiansen, 2006, Lee 2007). In Denmark research grants have been earmarked for methodological development of user-driven innovation and have resulted in several research centers, research groups, projects and experiments carried out in collaboration between researchers, business partners and users. The Scandinavian systems design tradition and user-driven innovation as defined by Freeman share a focus on human-artifact relationships of the tool-type, where the aim is to design for skilled people. The assumption is that users are in fact already skilled in what they do, hold potential to design improvements, adapt inventions, and turn them into innovations. Our ambition here is, to inform practical design by elaborating on a discourse of learning as embedded in the asymmetrical relationships of interaction, when users and designers collaborate in design. As opposed to von Hippel's lead user-category we have worked with innovators who may not be future users themselves. Their qualification was their situatedness in the home and everyday practice of electricity consumption and household reflections – a practice too rich for designers to

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