Appropriation Infrastructure: Mediating Appropriation and Production Work

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ABSTRACT

End User Development offers technological flexibility to encourage the appropriation of software applications within specific contexts of use. Appropriation needs to be understood as a phenomenon of many collaborative and creative activities. To support appropriation, we propose integrating communication infrastructure into software application that follows an “easy-to-collaborate”-principle. Such an appropriation infrastructure stimulates the experience sharing among a heterogeneous product community and supports the situated development of usages. Taking the case of the BSCWeasel groupware, we demonstrate how an appropriation infrastructure can be realized. Empirical results from the BSCWeasel project demonstrate the impact of such an infrastructure on the appropriation and design process. Based on these results, we argue that the social construction of IT artifacts should be tightly integrated in the material construction of IT artifacts in bridging design and use discourses.

Keywords: Appropriation Infrastructure, BSCWeasel, Communication Infrastructure, End User Development, Social Construction of IT Artifacts

INTRODUCTION

We interpret the appropriation of information technology not as a phenomenon that somehow happens once a software application is in its ‘application field’, but as a network of activities that users continuously perform in order to make a software ‘work’ in a new work environment, shaping the artifact as a material as well as a meaningful object. Existing practices evolve and result in new practices. Technical flexibility to redesign the application according to specific local needs play a major role in enabling appropriation work. Appropriation work may lead to software usages that go beyond what has been envisioned by the designers of the software application (cf. Pipek, 2005). It is a specific part of an IT artifact’s usage, but it remains also linked (through the artifact’s materiality) with its design process and the designer’s work environments. Appropriation work needs to be understood as a core concept in the field of End User Development (EUD).

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To deal appropriately with the combined efforts of users and designers to successfully establish a software tool usage that satisfies the needs of practice requires a fundamental shift in perspectives on the concepts of ‘design’ and ‘use’. If the target of a design process is not a technology/software/tool, but a certain usage (that is stimulated by a certain new technology/software/tool), traditional notions of design processes and product structures become problematic. When does the development of usages start, when does it stop? Is it a continuous or a discrete process? Who initiates ‘design’ phases—the developer side or the user side? For which parts in shaping a usage are professional designers responsible, and for which parts the ‘users’ (they may be considered as professional usage designers just with a different expertise profile)? Which competencies and experiences are necessary to perform certain activities of appropriation work?

We see the cracks in the idea of a strict separation of design and use spheres everywhere in practice: In the necessity for software development in cycles, in the frequent software updating procedures, in continuous helpline support provided by software manufacturers, in the differentiation of user roles (scale between end users and power/lead users), in software development contract structures that include ‘maintenance’, in the practice of user forums in the Internet (that may have been provided by software manufacturers, but also third parties), and also in scientific conceptualizations e.g. with regard to ‘tailoring’ functions that support design-in-use (Henderson & Kyng, 1991), with regard to integrating users into software design (e.g. Floyd et al., 1989), with regard to professionalization structures in design and the problems they may cause (e.g. Suchman, 2002) or with regard to the integration of user-driven innovation in (re-)design processes (e.g. von Hippel & Katz, 2002). In fact, the blurring notions of design and use spheres point towards collaboration necessities and opportunities which, we claim should become a central research area in the field of End User Development.

We will first connect our perspective to the scientific discourse on the technical and symbolic dimension of appropriation. Based on a dialectic perspective of artifacts and usages, we will describe a framework to support the communicative appropriation among the diverse actors in a product community. We have implemented a first example of an appropriation infrastructure when designing the BSCWeasel groupware. To evaluate the utility of appropriation infrastructures, empirical results from the BSCWeasel project are presented.

**APPROPRIATION IN AND OF PRODUCTION WORK**

“[P]roduction and consumption are not completely separate spheres of existence but rather are mutually constitutive of one another: What happens to a product in consumption has effects for producers and so on, in an ongoing cycle of commodification—where producers make new products or different versions of old products as a result of consumers’ activities—and appropriation—where consumers make those products meaningful, sometimes making them achieve a new ‘register’ of meaning that affects production in some way. In this sense, the meanings that products come to have are constructed in this process of dialogue - albeit rarely an equal one in terms of power relations - between production and consumption” (du Gay et al., 1997, p. 103).

**Forms of Appropriation**

In the first notion, appropriation is the work to make things work (Pipek, 2005; Balka & Wagner, 2006). It is fitting of the technology at hand into pre-existing culture and into local patterns of use and life rhythms (Silverstone & Haddon, 1996). Appropriation characterizes the socialization of material objects “to use it constructively, to incorporate it into one’s life for better or worse” (Poole & DeSanctis, 1989, p. 150).
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