Enhancing and Inhibiting: Artifact Ecologies and Human Experience

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Abstract

This paper outlines the rationale for, and plans to, conduct a study addressing the paradoxical nature of IT-use in relation to everyday activities. While the area of User Experience Design (UED) focus on immediate use of an IT-artifact, the focus of the proposed empirical study is how individuals use, or restrict their use, of these artifacts to enhance and avoid inhibiting an experience. We expect the outcome to be an improved understanding of individual strategies for IT-use for enhancing the experience of everyday activities as well as the rationale behind them.

Author Keywords

IT-artifacts; artifact ecologies; HCI; User; Experience

ACM Classification Keywords

H.5.m. Information interfaces and presentation (e.g., HCI): Miscellaneous. See:
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Introduction

Ubiquitous access to computational power has enabled us as individuals to bring our IT-artifacts into a more diversified set of contexts than ever before. Even outside a work context, technology is used to enhance

our experiences of almost every activity ranging from going to concerts, shopping, attending weddings and funerals, training, going to a theatre, or fishing with a friend. Unfortunately, technology use, our own or that of others, is also associated with negative effects on these experiences. We have all experienced irritation over situations such as an incoming call while watching a movie, a work related request during a vacation, or mobile game notifications during family dinners. This paradoxical characteristic of technology has been previously addressed. [1] used the metaphor of the two-faced roman deity Janus to describe how cellular phones can influence our lives in highly paradoxical ways, ways that require strategies of how to use technology for enhancing, and not inhibiting, our everyday experiences. To make things even more challenging, these strategies will most likely need to include not only a single artifact, but ecologies of interactive artifacts [2]. The aim of this paper is to present a study that will explore individual strategies to manage the paradoxical nature of interactive technologies as well as the rationale behind them.

Background
The paradoxical nature of technology is in the center of attention in [1] who describes how technologies that traditionally have been designed to do particular things can now behave in paradoxical and sometimes ironic ways. The example provided is the mobile phone that at the same time can make individuals mobile and fixed, independent and co-dependent, close and distant etc. This paradox could be seen in the way that interactive artifacts can be used to enhance, at the same time as they might inhibit, our everyday experiences. A focus on experiences have for some time characterized branches of research within Human-

Computer Interaction (HCI). One such branch is the research area of user experience design (UED). This is an area that primarily targets the immediate interaction between a user and his or her interactive artifact and takes, in comparison to more traditional HCI, a slightly different focus in that it addresses quite different use situations. While main research within HCI primarily focus on work related contexts where the main objective is to be more efficient, experience fewer errors, or work more effectively, UED focus on designs for enjoyment. Some have claimed UED means that a shift has been made, a shift towards designing for pleasure rather than for absence of pain [3]. While UED focus on the experience of interacting with an artifact, other HCI-researchers take as their primary focus to explore ways to enhance human experiences taking place outside the interaction between a user and an interactive artifact. Some of the experiences that have been addressed are attending school concerts [4], visiting museums [5], spending time in our living rooms [6], or sweating on running trails [7], just to give some examples. Other HCI researchers have been focusing on ways in which the very same technology can threaten these experiences and cause unwanted consequences. This stream of research has targeted negative effects for the individual, and sometimes also for others [8], of using interactive artifacts [9, 10]. Another change in HCI-research is that the long dominant view on individuals and their interaction with single artifacts has quite recently been complemented with another focus, one that zooms out and includes much more than that. [11] studied interconnections of multiple artifacts and others have put forward the notion of artifact ecologies [2, 12, 13] to describe situations in which individuals and groups are not only interacting with single artifacts, but rather with

networks, or ecologies, of interactive artifacts. In order to better understand the ways in which artifacts are used to enhance our experiences, and not inhibit them, we need to be open for individual's interaction with ecologies of artifacts

The Study

In order to address how individuals use, or restrict, their use of IT-artifacts (single artifacts or ecologies thereof) to enhance or protect experiences, we arranged a collaborative and qualitative study. Students following a master program in Human-Computer Interaction at our department were enrolled in the data gathering process. Involving students in research is a well-established strategy within the social sciences [14] even if it also means measures needs to be taken to secure the validity of data. In our case these measures consisted of:

- Clearly informing about aim and purpose of study
- Demanding use of a predefined set of questions
- Arranging several tutoring sessions
- Asking for the raw data to be handed in
- Removing data of questionable quality

Students were instructed to choose a specific activity, in which IT-artifacts are used, and to conduct four semi-structured interviews with a specific focus on how IT is used to enhance it, and also on how that use is restricted to protect it. 16 students handed in their assignments and out of these 13 provided transcripts of 52 correctly conducted interviews. Those transcripts that were not included suffered from errors such as students making leading questions, not leaving room for answers, and badly performed sampling (e.g. that

no IT-use took place at all while engaging in the selected activity). The diverse set of activities that were reported successfully were: training at a gym, video gaming, running, shopping, travelling, hunting, attending to concerts, breast feeding and downhill skiing. Data has yet not been analyzed but will be through a procedure inspired by [15] were both authors, individually, search through the empirical data for patterns and themes. As a second step these patterns and themes are compared, discussed and an agreement is reached. The result of that procedure will constitute the structure and outcome of the analysis.

Conclusions

Even if the analysis of the gathered data is left to be done, there are some early indications of what is going to be found. One is that individuals do apply rather sophisticated strategies for both enhancing their experiences, but also to avoid inhibiting them, through technology use. These strategies differ from one individual to another and rich descriptions will be provided. Another insight is that individuals often use technologies in combination. The sport watch or mobile phone register the number of steps that are later uploaded and shared through a tablet or PC etc. This underlines that it is of focal concern to understand a user's artifact ecology if we are to add new artifacts into it. Other indications point toward individual preferences as an influential factor that governs the way that individuals decide to enhance an experience by involving technology, but also when it comes to protecting it by avoiding negative influences caused by the very same technology. There is however also other factors that influence individual behavior in this case such as social factors. These could stem from societal norms such as a child being the most important thing

(so you shouldn't watch Netflix, a provider of on-demand Internet streaming media, while feeding it), but could also emerge as a consequence of having other people around or belonging to a specific group.

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