

Preface

Information and Communication Technology (ICT) has undergone a great evolution in the last decades. The miniaturization of computers and the development of ever smaller and more powerful sensors have permitted the emergence of more embedded and smarter computing, which has started to profoundly change our habits and daily life [1]. The ICT research efforts presented in the first part of this volume (Voinin and De Paz et al.) give a first indication of the potential of such ubiquitous computing (ubicom) to realize the vision of an ‘internet of things’ connecting physical and digital artifacts. Some applications are already on the market, others are about to appear, and others have not yet been imagined.

In this volume, we put our attention on the developments that are taking place in the workplace. It is obvious that ubicom has also begun to enter our working environments and to transform our conceptions of work, our relation to it, as well as our professional skills and well-being. And these evolutions are going to continue.

Yet managers and HR professionals seem to be mostly unaware of these developments. They are relatively poorly prepared for the organizational and managerial transformations that come with ubicom in workplaces. While some authors have started to question the implications of ubicom for Information Technology Management in companies [2], made studies on the acceptance of Intelligent Working Environments (IWE) [3], or tried to sketch scenarios of the future workplace [4], almost none have proposed to examine the ethical and managerial issues of these developments.

This observation has led us to create a research group in order to address this specific question. Over the last two years there have been three workshops on the topic of Human Resource Management Challenges of Intelligent Working Environments (IWE&HRM), organized by an international program committee and taking place at the HEIG-VD in Yverdon-les-Bains, Switzerland. These workshops brought together experts from various disciplines who have been working on the socio-ethical impact of technological developments in ubicom, pervasive computing, and ambient intelligence in various research and development projects. The aim was to gather the distributed expertise and experiences of these experts within different application settings in order to formulate recommendations for (human

resource) managers who are increasingly faced with new developments in workplaces becoming “intelligent” that they may not fully comprehend, yet need to be prepared for.

The workshops were elaborately designed and prepared (establishment of a program, clear-cut objectives, and instructions). Participants were requested to submit work in advance as a basis for the discussion. One or two participants would also be invited to present a paper related to their individual research in order to gain momentum for the discussion. Each workshop resulted in a report. During the workshops particular attention was paid to the interdisciplinarity of the discussion (e.g., speaking slots), the achievements of the predefined objectives, and the integration of the points of agreement/disagreement in the workshop reports.

In large part, the papers presented in this volume directly result from these meetings, in particular from the third one which more specifically focused on socio-ethical concerns and was part of a research conference on “Ubiquitous Computing in the Workplace: What Ethical Issues?” in Yverdon-les-Bains in 2013.¹ At the end of the last workshop, it appeared that the papers that had been presented (De Paz et al., Wieglerling, Kinder-Kurlanda et al.) as well as the ensuing discussion (Ehrwein Nihan) deserved to be published—all the more so in view of the scarcity of publications related to the topic. We decided to expand the volume with three additional invited papers (Voinin, Hilty, Poltier). All authors were selected on the basis of their expertise as well as on their previous peer-reviewed work in the field. Contributions were reviewed by two members of the program committee and proposed changes were implemented as requested.

The book has been conceived and structured in two parts as follows: A first part is dedicated to the current developments of ubicomp systems designed for the workplace. Guy Voinin, from the Swiss Center for Electronics and Micro-technology (CSEM), and Francisco De Paz, Sara Rodríguez, Carolina Zato, and Juan M. Corchado from the Department of Computer Science and Automation in Salamanca (Spain) offer us an introductory insight into potential fixed as well as wearable IWEs.

The second part of the volume focuses on the ethical issues raised by the current developments of ubicomp in the workplace. These are considered from multi-level and cross-disciplinary perspectives. In a first step, the philosopher Klaus Wieglerling from the Kaiserslautern Technical University in Germany proposes a meta-ethical investigation of the challenges raised by the current developments in ubiquitous computing. He particularly addresses questions of the personal identity of the subject who has to act within an ambient intelligent environment, of his/her perception of the life-world (“Lebenswelt”), and of the possibility of his/her choice.

We then turn toward more specific socio-ethical perspectives: first, the ICT scientist Lorenz Hilty proposes to look at the evolution of the discourses between the first ethical reflections on ICT in the 1970s and on the progressive appearance of

¹ <http://www.heig-vd.ch/campus/evenements/research-conference-ubiquitous-computing-in-the-workplace-what-ethical-issues>.

ubicmp over the last two decades. He highlights the persistence of certain issues while bringing out the emergence of new aspects. The anthropologist Katharina Kinder-Kurlanda and the management, technology, and economics researcher Daniel Boos also explore this socio-ethical level, but in a less socio-historical and more socio-anthropological way. Relating experiences from two ubicomp projects, they show how these specific examples are connected to wider societal trends and ethical issues of informational ubiquity such as the requirement for more transparency and information control.

The next paper, dedicated to the results of the IWE&HRM research project (see above), takes an even closer look at the applied ethical issues raised by the development of ubicomp in the workplace. After general conceptual and socio-ethical considerations, the ethicist Céline Ehrwein Nihan examines some of the concrete impacts that these environments might have for both employers and employees. On this basis she then makes some suggestions regarding the rules that should be respected in order to favor an adequate implementation of ubicomp in the workplace.

The volume ends with a paper by the philosopher Hughes Poltier, who again widens the scope of analysis with an ethico-political perspective on the discussion. Highlighting the power at stake in every technical device, the author focuses on the risk of ubicomp development increasing the power imbalance within organizations and more generally in society. By doing so, he reminds us that we are all responsible to engage in discussion and decision making regarding the design and implementation of future ubicomp technology.

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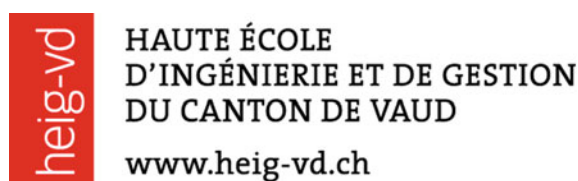
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