

European Society for Socially Embedded Technologies (EUSSET)

A POSITION STATEMENT

There is a paradigm shift in the computing field towards an anchoring of technology design in human activity that has been slowly gathering momentum over the past quarter century, and is now beginning to move from the periphery of the computing field to a central role. The issues at stake here are substantive and have profound implications for the understanding of the computing field. Thus it is not simply the need to (occasionally) talk about issues of computers and society, nor simply the need to incorporate user interface design or human-computer interaction. Rather, what is involved is a radical re-thinking of the computing field, and a shift in emphasis from aspects of the hardware and software to aspects of the human, social and organizational contexts within which information and communication technologies are both being designed and used.

Many people have been involved in the attempt to shift the focus of computing - and informatics more generally – away from a purely technical approach concerned with hardware and software only, to one that considers the human activities of design and use of information systems as being of central concern.

The reasons for this shift in perspective is the fact that IT artifacts are pervading almost all aspects of our daily lives. The very nature of the new technologies themselves, such as ubiquitous computing and developments around open source software, Web 2.0, mash-ups, collaborative environments, massive multi-player gaming systems, recommender systems, and the rapid dissemination and take-up of social software sites such as YouTube, Flickr, illustrate this argument. However, the need for a stronger focus on socially embedding technologies also pertains to more traditional application fields, such as for example health care, education, manufacturing, as these become increasingly more computer-supported. Research in these domains requires a dialogue with practise. Compared to the US, Europe has a stronger tradition in cooperative research linking IT industries, application partners, and research institutions.

Over the past 20 years, within Europe, there has developed a large base of expertise coming from a variety of disciplines that has developed an approach to information systems (conceived both in the large – in terms of corporate or community infrastructures, to the small – in terms of home appliances, consumer products, mobile personal devices) conception, design and use that is built on a large corpus of fieldwork in a variety of domains and with a variety of stakeholders. Such work is evident in a number of highly regarded research conferences, such as European CSCW (ECSCW) conference series, the Participative Design Conference (PDC), a variety of Human-Computer Interaction events, such as NordiCHI, British HCI or MobileHCI, Workplace Studies meetings, the Community & Technologies conference series, and various Information Systems Conferences. From these practise-based lines of thinking, Europe has a competitive advantage when leveraging towards

a new approach to engaging with design and use of technologies. Additionally, its cultural diversity engenders sensitivity towards the complexities of human activity.

Our approach focuses on understanding human activity, from a variety of perspectives, all of which seek to provide useful and pertinent observations on human action in the world. What is common amongst this work is a highlighting of the user perspective, examining how people accomplish their goals – with and through other people, and at times, other media. While technology may play an important role in these human activities, often the use of the technology is as an intrinsic mediating influence, rather than being the goal of the activity. The relevance of this approach to technology development is that it provides a distinct perspective that encompasses many of the key issues being faced by computing technology developers today – issues such as *awareness, context, interaction, engagement, emotion*. All of these aspects concern the activities of human actors in a (variety of) setting(s).

A Look Into The Future

Despite the rhetoric concerning the Information Society, what is remarkable is how little human beings have changed their goals, aspirations and even activities over the past half-century. New technologies are appropriated to fit into these more enduring concerns, of working, learning, meeting friends, searching for meaning in our lives. We need a rich understanding of the human, social and cultural world in order to design technological artefacts and environments that people find useful, usable and engaging. It is our belief that there needs to be significant research work to provide more integrated conceptual frames for understanding human activity in the world, which can serve as an inspiration and motivation for developing design scenarios involving “ubiquitous technology” that can in turn orient technological developments.

This document argues for the need for a re-structuring of the research agenda in the fields of information technology in Europe. There is extensive support by the European Union for research on supporting the development of a knowledge-based economy in Europe. Much of this support is channeled through EU Framework Programmes for the Knowledge Economy. Within these programmes, significant resources are put into developing the underlying technical infrastructure – in terms of telecommunications and computing. More limited funding, often in other programmes, is given for smaller projects investigating the economic, social, cultural, and political impact of these developments. There is a large gap, however, between the two poles of this continuum, from purely technical development to “social impact” studies, and it is in this in-between space that we wish to position our approach, which is one that *engages with design and construction of media and technologies*, but does so from a perspective where an understanding of individual and social use patterns and activities is primary. In other words, our aim is to support and leverage of human and social capabilities through augmenting these capabilities with new artefacts, media and infrastructures. In fact, we believe that our approach is essential in order to ensure that our visions are grounded in knowledge of user needs and an understanding of workplace, home, and leisure activities. This is a distinct vision from certain other research programmes and perspectives currently in-vogue in Europe, such as Ambient Intelligence, Presence, and Robotics research agendas.

While there is significant work in mobile technologies, one of the areas where Europe has a lead, much of the work within the ubiquitous computing paradigm could benefit

from a stronger grounding in practical human activities. Living Labs are an interesting design approach which could allow investigating into experimental appropriation activities of different stakeholders. However, this approach needs to be further worked out. We need to explicitly address questions such as: how can we arrive at a more holistic view of human-systems interaction that begins to privilege the human, social and cultural aspects of computing; how can we respond to the inescapable 'permanent tension' between the need for global systems and the enduring or emerging local concerns and issues, how can we design in support of cultural diversity, social inclusion, as well as social and environmental sustainability; how can we design for new forms of engagement and participation?

In Europe, we have a strong philosophical, sociological and anthropological research tradition that should be able to make a significant contribution to the articulation of more realistic scenarios for life in the future than those derived purely from technological fetishism. We are beginning to see the emergence of an approach to technology that is informed by an understanding of our social and cultural world. This can be seen in our developing understanding of how work gets done, of how people live in the home, of the importance of human networks, of how knowledge is not viewed simply as a thing to be delivered, of what motivates people. We need to build on this understanding, rather than ignore it. Thus we argue for a new paradigm for research within the EU on issues of the knowledge society and its underpinning infrastructures and media, in a nutshell, an exploration of socially-embedded technologies for the new European society of the 21st Century.

- Emile Aarts, (Philips Research, Eindhoven)
- Liam Bannon (University of Limerick)
- Russell Beale (University of Birmingham)
- David Benyon (Napier University)
- Susanne Bodker (Aarhus University)
- Tone Bratteteig (University of Oslo)
- Maria Francesca Costabile (University of Bari)
- Giorgio de Michelis (University of Milano-Bicocca)
- Boris de Ruyters (Philips Research, Eindhoven)
- Pelle Ehn (University of Malmo)
- Vincent Encontre (IntuiLab, France)
- Roman Englert (Deutsche Telekom Laboratories, Beer Sheva)
- Hans Gellersen (University of Lancaster)
- Marlene Huysman (Free University of Amsterdam)
- Gianni Jacucci (University of Trento)
- Kari Kuutti (University of Oulu)
- Thorsten Leidig (SAP Research, Karlsruhe)
- Claudio Moderini (Domus Academy, Milano)
- Philippe Palanque (University of Toulouse)

- Fabio Paternó (CNR Pisa)
- Antonio Rizzo (University of Siena)
- Virpi Roto (Nokia Research)
- Pascal Salembier (UT Troyes)
- Albrecht Schmidt (University of Duisburg-Essen)
- Kjeld Schmidt (Copenhagen Business School)
- Carla Simone (University of Milano Bicocca)
- Thomas Strang (DLR Oberpfaffenhofen and University of Innsbruck)
- Yngve Sundblad (KTH Stockholm)
- Manfred Tscheligi (University of Salzburg)
- Ina Wagner (Technical University of Vienna)
- Volker Wulf (University of Siegen and Fraunhofer FIT)
- Manual Zacklad (UT Troyes)