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Abstract for Session X:

Computer science as science of socio-technical design. Examples from Ubiquitous Computing

As Herbert Simon (1996 [1969]: 3) has suggested, engineering sciences should be viewed as „sciences of the artificial“. Accordingly, they should be conceived as sciences of design, sciences which are “concerned not with the necessary but with the contingent not with how things are but with how they might be in short, with design” (p. xii). Unfortunately, engineering sciences tend to understand themselves as similar to natural sciences and, thus, to ignore design issues” (p. 112). What is fascinating with computer science is that, in contrast to other engineering sciences, it has a long-standing tradition of being a science of design (cf. Schulz-Schaeffer 1996), and, what is more, as a science of design which aims at designing not only technology but social structures and processes as well.

This characteristic of computer science as a science of socio-technical design becomes very obvious in cases in which computer scientists orient their engineering activities at socio-technical scenarios. Scenarios of this kind are descriptions of future situations of the envisioned technology in use, descriptions which address technological features in relation to corresponding features of the envisioned social situation of use and, thus, technological requirements in relation to social requirements (and vice versa). The talk will provide empirical evidence for how computer scientists are designing socio-technical settings by using scenarios as a means of “inventing the future” The evidence stems from empirical research on the role of scenarios in ubiquitous computing development projects (cf. Schulz-Schaeffer 2013). The research has been funded by the DFG and includes interviews with and documents from ubiquitous computing researchers in Japan, the USA, and the EU.

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Schulz-Schaeffer, Ingo (2013): Scenarios as Patterns of Orientation in Technology Development and Technology Assessment. Outline of a Research Program, in: Science, Technology & Innovation Studies 9(1), S. 23-44.

Simon, Herbert A. (1996 [1969]): The sciences of the artificial, Cambridge, MA: MIT press.