

# Interfacing Imagination

**Dipl. Psych. Henning Breuer**  
Otto-von-Guericke-University Magdeburg

## The state of the art

While psychological studies on the practice of software developers (Schachtner 1993) and designers often neglect the materiality of the media used and the products produced, user- and product-oriented studies concerning human-computer-interaction and software ergonomics (i.e. Dix et al. 1998) do not pay sufficient attention to the authentic processes (Gedenryd 1998), that lead to a specific design of software programs and their interfaces. The missing link of process and product in research is paralleled by the common gap in practice between the development and “epigenetic” evaluation of new programs.

Besides models of rational action (Joas 1996) on behalf of users and developers are assumed whereas questions concerning the sensual qualities of interfaces, the joy of use and the creative concretization of the situation within the interaction are neglected.

To face these theoretical and practical problems an integrative perspective on the interrelation of authentic developmental processes and interface design is elaborated upon. Development-psychological and technology-genetic (Dierkes, Hoffmann and Marz 1992; Hellige 1996) approaches are integrated into a cultivation-theoretical concept (Fuhrer 1999), that focuses on the mutual constitution of identity formation and technology development. It also leads to a shift from rational behaviour to creative action including prospective Imaginations as the underlying concept for the study and design of human-computer-interaction as well as the processes, by which it is developed.

## Designing Research

The interrelation of the design process and its products is studied within the dynamic of individual, social and material aspects (Nardi 1996). The role of Imaginations of possible transactions has to be elaborated in order to relativate models of rational action.

As a background for empirical process-oriented studies different "Leitbilder" (Imaginative models) of interface-design are worked out historically. Leitbild-centered interviews (Breuer 1998) with interaction-designers and software-developers (creating net-based individualized software for business applications) yield insight into their Imaginations of themselves, the users and the technology. Imagination becomes relevant and is modified in concrete transactions between individual, team and technology. Out of these transactions, mediated by sketches and prototypes, the range of possibilities to use the product emerges.

## Imagination at work

In a case study this process was empirically accompanied. The process is visualized on the poster. In this case a new founded company developing individualized net-based software for business applications created its own internet homepage. The individual perspectives of the developers involved have been derived from a metaphor analysis of interviews, the social interaction has been studied from the records of project meetings and the product-related activity has been investigated by analyzing protocols of “thinking aloud” during programming sessions. Imaginations of the corporate identity and the future visitors of the site emerged from the process and were reflected by the product. On side of the product the non-rational side of the action has been implemented by implicit means of the navigation and the “look-and-feel” of the site. The Imaginations of user activity and preferences by the team were then contrasted with the perspectives and performances of users, also gained from interviews and protocols of “thinking aloud”. The role of Imagination in situated creative action on behalf of developers and users of human-computer-systems has been worked out.

## Conclusions

The final discussion of different designs of the developmental processes and imaginative models (Leitbilder) yields indications to the further design of human-computer-systems and the projects of their development. In this perspective the early use of scenario techniques and recursive models of organization support the creative integration of contradicting views into the developmental process.

## References

- Breuer, H. (1998). *Technische Innovation und Altern - Leitbilder und Innovationsstile bei der Entwicklung neuer Informations- und Kommunikationstechnologien für eine alternde Menschheit. [Technological Innovation and Aging]*. WZB-Papers FS II 98. Wissenschaftszentrum Berlin für Sozialforschung.
- Dierkes, M., Hoffmann, U. & Marz, L. (1992). *Leitbild und Technik. Zur Entstehung und Steuerung technischer Innovationen. [Leitbild and Technology]*. Berlin: Ed. Sigma, Rainer Bohn Verlag.
- Dix, A., Finlay, J., Abowd, G. & Beale, R. (1998). *Human-Computer Interaction*. 2nd Edition. Bath: Bath Press.
- Fuhrer, U. (1999). *Cultivating Minds*. In prep.
- Gedenryd, H. (1998). *How designers work - making sense of authentic cognitive activities*. Lund University Cognitive Studies: Jabe Offset AB.
- Hellige, H. D. (Hrsg.). (1996). *Technikleitbilder auf dem Prüfstand. Leitbild-Assessment aus Sicht der Informatik und Computergeschichte. [Audit of Imaginative Models of Technology]*. Berlin: Rainer Bohn Verlag.
- Joas, H. (1996). *Die Kreativität des Handelns. [The Creativity of Acting]*. Frankfurt a.M.: Suhrkamp.
- Nardi, B. (Ed.). (1996). *Context and Consciousness: Activity Theory and Human-Computer-Interaction*. Cambridge: MIT Press.
- Schachtner, Chr. (1993). *Geistmaschine. Faszination und Provokation am Computer. [Mindmachine]*. Frankfurt a.M.: Suhrkamp.