



MAP: Multimedia Workplace of the Future

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Overview

Working environments, especially computer-supported workplaces, have changed dramatically over time. Figure 1 shows how the integration and use of computers has changed. In times of main-frame computers, the machines were operated by experts. From the 80s and 90s, until today, computers have mainly been used by single users. The user has to work with »tools« and must perform tasks himself. In the future, the computer will not be »used« anymore but the user – who will increasingly function as an actor – will delegate tasks. The computer will be more like an assistant. Furthermore, the integration and use of different kinds of networks, from high-bandwidth LANs down to low-bandwidth wide-area cellular networks, will be seamless.

In today's working environments, there is a need to respond quickly, flexibly and to plan ahead. This requires new and more dynamic ways of working with computers. The new role of the computer will be the focus of the project MAP. Together with the consideration of new working structures which lead more and more to mobile work, the topics delegation, assistance as well as support of mobile devices and integrated networks will play a main role in our developments.

One goal of the MAP project is the development of a kernel-system which includes the support of agent technology, new human-computer interaction mechanisms, the integration of security mechanisms, and the support of mobile devices and context-aware working. MAP is one of the focus

German Abstract

Mit 14 Partnern aus Forschung und Industrie hat sich das vom BMWi unterstützte Leitprojekt »MAP« (Multimedia Arbeitsplatz der Zukunft) zum Ziel gesetzt, neuartige Konzepte und ein Basissystem für zukünftige mobile, multimediale Arbeitsplätze zu entwickeln, um damit die zunehmende Mobilität am Arbeitsplatz nachhaltig zu unterstützen und den Benutzer bei Routinetätigkeiten zu entlasten. Durch die Entwicklung neuer Methoden in den Bereichen Sicherheitstechnologie, Mensch-Maschine-Interaktion, Agententechnologie und Mobilitätsunterstützung werden neue Arbeitsformen und Integrationsmöglichkeiten von Computern speziell bei mobilen Tätigkeiten ermöglicht. Die Arbeiten an der Entwicklung des MAP-Kernsystems werden zum einen geleitet und unterstützt durch Untersuchungen in den Bereichen Akzeptanz und Akzeptabilität, zum anderen evaluiert durch die Entwicklung konkreter MAP-Arbeitsplätze.

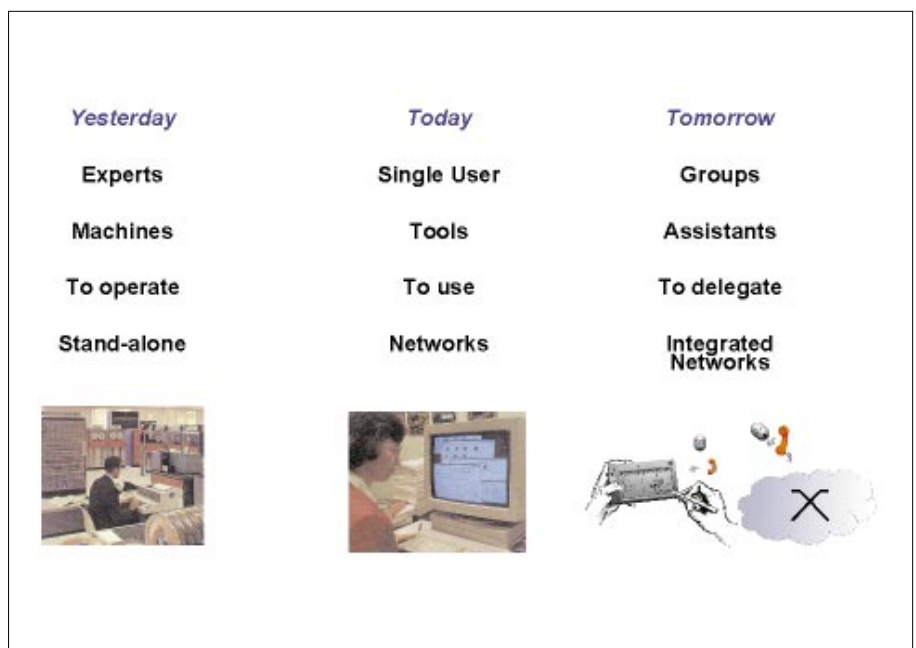


Figure 1: Changes in computer-based working over time

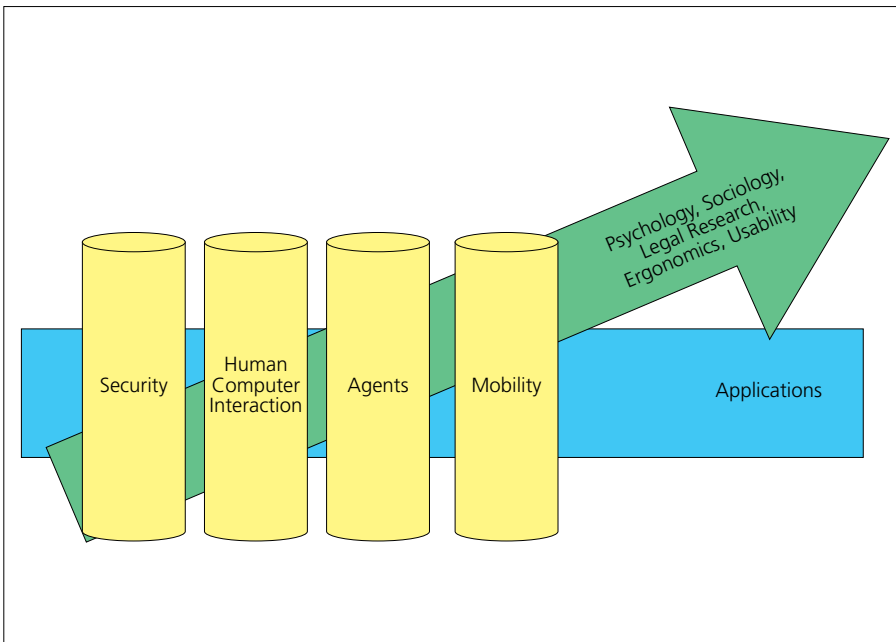


Figure 2: Working structure of the MAP project

projects in the area of Human-Technique-Interaction and is partly funded by the German Federal Ministry of Economics and Technology (BMW).
 The MAP consortium consists of 10 industrial partners, including 6 SMEs and 6 research partners. This consortium was brought together by the Computer Graphics Center (ZGDV) and Fraunhofer IGD in 1998. The consortium is headed by Alcatel SEL.

Project goals and working structure

The focus of MAP is the development of special technologies, components and new methods for multimedia interactions that use novel and intelligent systems offering assistance and supporting delegation. Today's user must be able to understand, handle and evaluate data at his multimedia workplace, whether at the office or on-site and also when at home to delegate work back to the office.

Routine tasks that have little structure or are time-consuming can be done by using software-agents – no intervention of the user is needed. The results can then be reported back and pre-

sented in adapted multimedia presentations. The developments of MAP include:

- the integration of virtual reality and ubiquitous computing into a hybrid concept,
- the development of delegation mechanisms using agent based systems,
- new interfaces with speech and handwriting recognition and anthropomorphic presentation,
- adaptation to mobile environments,
- preparation of mobile assisted functions,
- security aspects e.g. authenticity, confidence and commitment.

These developments are also represented by the working structure of the MAP project (cf. Figure 2).

As results of this project, components are created which enhance the working quality significantly by addressing the requirements of complex coordinations and adaptive information presentations. Typical working processes, including high mobility and multiple tasks processing, will be part of the MAP applications. There are two main phases during the project work: the development and testing of prototypes of

multimedia workplaces and user evaluation in a field trial. Furthermore, the MAP system will be developed in two generations.

The results of MAP will allow industries to use resources efficiently and this will enhance productivity, especially when done on the move. The results will further be the basis of a new standard for mobile multimedia workplaces.

Project state

The work on MAP has begun in April 2000. Currently, the focus is on requirements analyses and technology evaluation. First software prototypes will be presented in March 2001.

Within INI-GraphicsNet, ZGDV, as well as Fraunhofer IGD and GRIS are members of the MAP consortium. Furthermore, two spin-offs of the INI-GraphicsNet, CAPCom and MedCom, are contributing to MAP. IGD Darmstadt is responsible for running the MAP project office, and, together with ZGDV, the integration and demonstration center of the MAP project will be operated in Darmstadt.

For further information, please see <http://www.map21.de>

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