MODIE 2006: Modeling and Designing
User Assistance in Intelligent Environments

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ABSTRACT
The MODIE workshop is focused on models, principles and methodologies for the modeling and designing of user assistance in intelligent environments. One of the most interesting topics for the MobileHCI community is the question on how the complementary paradigms of mobile computing and pervasive computing can supplement each other. How can mobile-personal and static-public devices be integrated to form Intelligent Environments, which effectively assist their users in typical activities and situations? We will invite researchers from multiple disciplines to submit short position papers, which contribute theoretical results and practical insights in order to foster a lively discussion about key research issues.

Categories and Subject Descriptions
H.5.2 [Information Interfaces and Presentation]: User Interfaces – Theory and Methods, User-centered design, Interaction Styles
D.2.1 [Software Engineering]: Requirements/Specifications – Methodologies

General Terms
Design, Human Factors

Keywords
Models, Principles, Intelligent Environments, Ubiquitous Computing

1. MOTIVATION
Ubicomp research continually develops novel interaction techniques, sensing technologies, and new ways of presenting personalized information to the user. Gradually, companies operating in environments such as airports, museums or even shopping malls are becoming aware of the potential benefits in letting such technologies assist their users and customers. Intelligent environments are predicted to aid their users in pursuing their activities, such as wayfinding or shopping, through the situated presentation of personalized information. However, due to the large design space that ranges from wearable computing to public displays, the conceptual and technological choices pose new challenges to the designer of such user-assistance systems.

2. THEMES AND TOPICS
We are interested in models, principles and methodologies, which guide the designer of an intelligent environment in the early stages of the development process, such as task and requirements analysis and conceptual design. We are looking for contributions, which will help the designer of user assistance systems to address the following questions:

- Which user activities and tasks require assistance?
- How to map an activity model into interactions with computing artifacts?
- How should the designer choose the best sensing and interaction technologies for a scenario?
- Which mobile or wearable personal devices can be employed?
- How should multiple users with concurrent activities be supported?
- How should the current state of the user assistance system be represented, especially when dealing with multiple tasks?
3. GOALS OF THE WORKSHOP

The intention of the workshop is to share experiences and perspectives on user assistance in intelligent environments from the different viewpoints of developers, designers, ethnographers and cognitive scientists. Each participant will give a short presentation about their contribution. The second half of the workshop will be focused on the discussion of key topics:

- How to unify the complementary concepts of public and personal devices in IEs
- How to model user activity (terminology, structure, notation) for the design of IEs
- Suggest a terminology for intelligent environments (IEs)
- How tools can support the modelling and designing of user assistance in IEs
- What the problems of applying traditional software engineering methodologies are
- Are there principles that can be generalized for the design of all IEs?

4. INTENDED PARTICIPANTS

We encourage researchers from the following disciplines to contribute position papers and knowledge to the discussion:

**Computer Scientists** (in the fields of Mobile HCI and Intelligent Environments): contribute experiences with working prototypes, discuss technical issues.

**Designers**: contribute new paradigms and concepts, discuss existing environments and current solutions to present information to the user, how might the future look like?

**Ethnographers**: contribute an analysis of user activities and problems in current environments, discuss application areas for Intelligent Environments.

**Cognitive Scientists**: contribute design principles for Intelligent Environments based on their knowledge about the limited resources of the ‘human processor’, discussion of pros and cons of interaction paradigms, concepts and technologies.

5. WORKSHOP FORMAT

MODIE will be a full day workshop. Each participant will give a short presentation on their position and experience in dealing with one or several of the workshop topics. It is assumed that the participants are already familiar with the position papers, which will be available as online proceedings prior to the workshop. In the afternoon, the participants will split into small groups and discuss interesting research topics. Afterwards we will present and discuss their results.

6. THE ORGANIZING COMMITTEE

The organizing committee for the first MODIE workshop on “Modeling and Designing User Assistance in Intelligent Environments” includes researchers from five different European institutes, that are working in the fields of intelligent user interfaces, ubiquitous computing, intelligent environments and interaction design. Lucia Terrenghi has previously arranged a workshop on user experience design for pervasive computing [1] and Thomas Pederson has previously co-organized a workshop on UbiPhysics - designing for physically integrated interaction [2].

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7. FURTHER INFORMATION

Further Information about MODIE 2006 is available on the workshop website at http://w5.cs.uni-sb.de/workshops/modie06/

The workshop proceedings will be published online.

8. REFERENCES
