

## InfoHumanica Knowledge Center

*The Department of Control Engineering and Information Technology* of the Faculty of Electrical Engineering and Informatics (Technical University of Budapest),

*The Faculty of Informatics* (Eötvös Loránd University),

*The Department of Cognitive Psychology* of the Faculty of Education and Psychology (Eötvös Loránd University),

*The Research Group of Developmental-psychophysiology* of the Research Institute of Psychology (Hungarian Academy of Sciences)

*The Center for Research on Learning and Instruction* (University of Szeged)

have founded a *Virtual Knowledge Center*. The Center targets a new field requiring integration of knowledge from the fields of information technology, psychology and education. Its goals are the following:

- to provide coordinated support for the national education and research,
- to forge coordinated help for innovations,
- to promote Hungarian graduate and postgraduate trainings in this new field
- as well as to represent Hungarian researchers and practitioners in the respective international networks.

### **Mission, tasks and preliminary activities of the Knowledge Center**

Information Technologies have been entering our everyday life and is targeting several dimensions of our social functioning. For example, the spreading of newer and newer cutting edge technological tools, grid and P2P software developments, ambient intelligences, medical instruments, body sensor networks and networks of implants, etc. The flood can be experienced in the huge amount of information, which fills in and sometimes pollutes our environment. A double-sided problem emerges in this respect: (i) we are not ready for internalizing neither to forecast the social and ethical consequences of this development, and (ii) we may fall victims to the flood of information that influences and penetrates our everyday life.

Recently, research projects both from Europe and the United States started to focus on this double-sided problem. The National Science Foundation of the US spelled the problem out clearly as early as 2003:

*“The future and well-being of the Nation depend on the effective integration of Information Technologies into its various enterprises, and social fabric. Information Technologies are designed, used and have consequences in a number of social, economic, legal, ethical and cultural contexts. With the rise of unprecedented new technologies ... and their increasing ubiquity in our social and economic lives, large-scale social, economic and scientific transformations are predicted. While these transformations are expected to be positive .... there is general agreement among leading researchers that we have insufficient scientific understanding of the actual scope and trajectory of these socio-technical transformations.”*

The mission of the InfoHumanica Knowledge Center is to decrease this uncertainty and enhance the positive traits of the fast development. In specific, to research, develop, implement, and test efficient systems that make use of human collaboration and embed technology components to promote the fast adaptation of the immediate physical environment as well as the broader social environment in order to efficiently filter the information flow, to provide the quality assurance for the collaborative methods by means of human friendly and enabling computer technologies.

The partners of the Knowledge Center are practitioners of different disciplines. They have submitted proposals in this interdisciplinary field, have joint grants and have been working on joint projects. The goal of the Knowledge Center is to provide the frame and shape the ongoing collaboration. The InfoHumanica Knowledge Center intends to develop connections with other Knowledge Centers that are experts, for example, in psychology, education, cognitive science, infobionics, embedded systems, and ambient intelligence.

## **INFOHUMANICA: research, development, dissemination**

### **Goals of research and development**

- development of helping environments
- collection of necessary information for remote and underdeveloped areas
- promotion of exchange of experiences of people who have similar problems but are isolated from each other
- development of methods to form collective wisdom and methods that can exploit the collected wisdom,

### **Areas of research and development that include both neuroscience and cognitive science:**

- Research of joint information gathering of collaborating groups
  - selection, filtering and evaluation of information
  - security and human right issues
- Research, development and implementation of systems that collect, filter, and evaluate information, for example, for
  - groups of people with special needs for handicapped people
  - elderly and ill people
- Research, development and application of engineering solutions for information collection and aid, e.g.,
  - embedded intelligence and ambient intelligence
  - body sensors, implantable devices and their networks.

### **Subjects of research and development:**

- research on the field of psychology on constraints to access information and methods that can decrease constraints,
- research on education, dissemination of findings, development of methods on how to integrate experiences into education, development of training materials for children with special needs,
- research on development of children, e.g., in remote areas, in atypical communities, in foster homes, and at foster parents,
- research on atypical developments, standardization of measuring methods of different handicaps, “dys”-es, like dyslexia, dyscalculia, etc., talent nurturing, research on methods that can help child development,
- research and development of methods of medical informatics, including networks of body sensors and implantable sensors,
- methods that evaluate the dissemination of collected information, the helping and the training materials as well as the adaptation, evaluation and dissemination of special information, special training materials,
- information technologies that help personalization of information and training materials, including alternative and augmentative communication methods that can improve communication of handicapped people,
- research on data collection methods over the internet that make use of anonymity or pseudonymity to spare privacy and human rights.