shoplab

Network for Test and Design of Hybrid Shop Environments

Adding Inter@ctive Colour
To Traditional Retailing

ShopLab is an innovative project that aims to transform European bricks-and-mortar inner city shops into novel multi-media outfits

The ShopLab project will produce hi-tech solutions for retail shops that combine the advantages of shopping in both real and virtual environments. New shopping experiences will be created using novel technologies and the competitiveness of retail shops will be increased through the provision of innovative customer services. In particular, the project will benefit the small to medium-sized retail shops typical of many European city centres.

From early in 2004 it will be possible to visit several 'Model' shops at different sites across Europe, developed in order to demonstrate the envisaged technologies to both technical audiences and the shopping public in general. The ShopLab project was launched officially in the autumn of 2001 in Fulda, Germany. It is supported by an EC grant as part of the Information Society Technologies Programme network.

Partners in the project include universities, research institutes and companies from five European countries - Germany, the United Kingdom, Switzerland, France and Greece. Final project results are expected in the autumn of 2004.

EXPLORING INTERACTIVITY

ShopLab merges the real objects found within retail showrooms with the virtual elements of digital media. This produces 'hybrid'

shopping environments supporting multi-modal interactions and appealing to multiple human sense modalities.

The ShopLab project concentrates upon four major development areas:
> the integration of virtual and real shopping environments
> the incorporation of new technologies within shop fittings and interior designs
> the development of multi-modal interfaces
> the integration of culturally and locally specific user needs

The results of research in these areas will be used to develop several ShopLab modules such as:
> an Interactive Window
> an Interactive Shelf
> an Interactive Mirror
> an Interactive Customer 'Attention Grabber'

These modules will act together to produce truly hybrid interactive shopping environments.

ON THE VISTA OF INNOVATION

A multi-disciplinary approach is at the core of the project's development.

Different disciplines are involved in ShopLab, including the design of both hardware and software interfaces, shop construction, multimedia applications, usability-

user acceptance testing, and intercultural communications.

The challenge is to integrate these approaches in developing hybrid electronic shopping environments.

In order to achieve this a network of Shop-Lab 'test beds' will permit "test-it-feel-it" experiences and will give opportunities for collaborations with both technology and content providers.

The design work is distributed between a design lab in the city-centre of Basel (Switzerland), a VR-lab in Athens (Greece) and two case-study shops in different cultural and business contexts in Germany and France.

A "ShopLab toolbox" will be developed, the components of which will allow owners of small to medium-sized retail shops to use innovative e-commerce technologies in a flexible and cost-effective way.

PRACTICAL IMPORTANCE

The key objective of the ShopLab project is to demonstrate the benefits of integrating 'virtual' and 'real world' shopping environments.

ShopLab offers culture specific interface and interspace designs integrated within hybrid shopping environments. These mixed environments seek to strengthen the competitiveness of retail shops. Combining 'the virtual' with'the real' in a hybrid manner will overcome the limits imposed by traditional retailing. The Shop-Lab project concentrates on flexible and practical solutions for a wide range of small and medium-size shops. It does so by using the latest hardware, software and interface technologies, in addition to innovative designs in terms of shop construction and multimedia content.

It develops novel hybrid shopping environments that combine the advantages of real world shopping environments with the possibilities of computer technology.

The project will ensure high levels of both user friendliness and acceptance through the use of innovative test-beds in which to prototype its systems. A 'model' shop will be established in the city centre of Basel, to which the public will have easy access. Two further 'test beds' will be located in real traditional shops - one in Germany, and the other in France.

An important innovative feature of the project is the development of novel human-computer interfaces that appeal to a range of human senses.

The nonverbal communication elements of ShopLab interfaces will reduce problems resulting from multi-lingualism in Europe.

In addition, the project will take care to be sensitive to cultural differences. This will lead to further innovations though the development of locally adjusted interfaces. Furthermore, the visual properties of the Shop-Lab system will include both input and output of information and will demonstrate various innovative design aspects.

ShopLab contact

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THE EXPLORERS

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Houot Agencement *France*
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Fachhochschule Fulda
University of Applied Sciences

The University of Applied Sciences in Fulda was founded in 1974.
The Department of Applied Computer Science opened in 1982 and was the first of its kind in the German state of Hessia. Approximately 4000 students attend the University, around 700 of which study within the Department of Computer Science. Courses offered include Economic Information Technologies, Media Information Technologies, Telecommunications and the recently commenced Masters of Science in e-Business.
The department provides graduates with expertise in a range of areas including digital systems, programming languages, data-base systems, software engineering, operating systems and computer communication.
In the field of multimedia courses are offered on real time multimedia systems, distributed multimedia, ergonomics/graphical user interfaces, multimedia programming, audio and video editing, online services and authoring tools.

Project leader

Prof. Dr. Karim Khakzar
Prof Dr. Khakzar holds an advanced degree in Electrical Engineering from the University of Stuttgart. He has worked as a systems engineer for Alcatel Telecom Stuttgart, Germany and as a manager for ISDN and ATM at Alcatel Telecom Brussels, Belgium.
He was editor at ETSI and ITU-T for several interface standards in the field of multimedia applications.
Since 1996 he has been Professor at the University of Applied Sciences Fulda, within the Department of Computer Science. He conducts both lectures and research on multimedia, audio and video technologies, and compression techniques, in addition to acting as head of the audio and video lab.
Prof. Dr. Khakzar is also path leader of the recently established Masters of Science programme in electronic business within the University.
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inter.research
Institut für interdisziplinäre Forschung e.V.

The Institute of Interdisciplinary Research inter.research e.V. is a non-profit registered association. It was founded in April 1999 to support the cooperation of different disciplines and departments of the University of Applied Sciences Fulda and partner institutions leading to interdisciplinary research projects.
The Institute aims to facilitate contacts between science and industry, universities and enterprises. It provides information about national and international research programmes, organises workshops and seminars, initiates research projects, helps finding appropriate local project partners and supports the administration of research projects.

Project coordinator

Dipl.-Inf. Thomas Berger
Director of the Institute of Interdisciplinary Research inter.research e.V.
Thomas Berger holds an advanced degree in Applied Computer Science from the University of Applied Sciences, Fulda. As one of the founding members of the institute he has managed European projects such as "TEECH-in - NetWork-TRAINing", funded by the European CONNECT-Programme.
He has published a number of articles in the field of "virtual communities of learning" and lectures a post-graduate course on "Communication with New Media".
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idmk Institut für digitale Medien
und Kommunikation GmbH

The Fulda-based idmk - Institut für digitale Medien und Kommunikation GmbH was founded in 1998 as a spin-off of the University of Applied Sciences Fulda. The institute functions as a private service provider and offers innovative solutions in the areas of information technology and management, new media, e-Commerce, and Internet/Intranet communication. Projects are often performed in close co-operation with Fulda University.

Project coordinator

Dipl.-Inf. Hans-Martin Pohl
Managing director and co-founder of idmk, he has an advanced degree in Applied Computer Science from the University of Applied Sciences, Fulda. He has worked as assistant researcher for digital audio and video technology within the Department of Computer Science of the University. Since 2002 he has also had a university teaching position on the subject of "multimedia system architectures".
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Houot Agencement *France*
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University of Leeds

The University of Leeds is a large university in the north of England with over 20,000 full-time equivalent students and over 2,000 academic and research staff. It has a strong research reputation and was involved in 122 EU-supported Framework Four projects, 42 of which were co-ordinated by the University. The School of Psychology is a large department with over 60 members of academic, research, and support staff, including five professors. The Human Factors group comprises seven psychologists and is one of four research groups within the School. There is a purpose-built human factors suite, a highly-specified psychophysiology laboratory, in addition to specialised laboratories for research on psychoacoustics and bright light manipulation.

Project coordinator

Dr. Steve Westerman
Dr. Westerman is a chartered psychologist. His research interests include the study of individual differences in cognition and the analysis of factors underlying effective human-computer interaction.
He has authored or co-authored a number of scientific publications in these areas.
Dr. Westerman is a Senior Lecturer in Human Factors at the University of Leeds.
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Fachhochschule beider Basel - HyperWerk

HyperWerk is a department of the FHBB / Fachhochschule beider Basel, which tackles the many challenges posed by knowledge acquisition, organisation and retrieval. Since spring 1999 HyperWerk has offered a three year course of fulltime graduate studies, with particular focus on the quality, content, structure, design, organisation and tools of teamwork. HyperWerk is organised in a similar manner to a theatrical production; the revolutionary concept behind HyperWerk is based on enactment, documentation, analysis and optimisation of scenarios with and around the use of team tools.

*Project coordinator
of both partners*

Dr. dipl. ing. Architekt Edouard Bannwart
Prof. Edouard Bannwart lives and works as an architect and urban planner in Basel. He taught at the Hochschule der Künste, Berlin, from 1971-87 and is co-founder of ART+COM of which he was managing chairman from 1988-94. Between 1994-2001 Bannwart was director of the media design company EchtZeit. His main interests are: the design of 3D virtual worlds; virtual navigation and communication tools for computer supported work; consultation and support for companies working with Virtual Reality and telecommunication technologies. Since October 2001 Bannwart has been member of HyperStudio and HyperWerk. He is in charge of both the ShopLab and HyShop projects.
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HyperStudio AG

HyperStudio was established in 1992, since when it has established an extensive work record, in addition to a number of internationally acclaimed media prizes.
HyperStudio's involvement in both European and Swiss research projects, together with experience in commercial media productions, demonstrate the high standard of its accomplishments. It is organised around three competence centres based on digital video, design and events. It is a limited company and is owned exclusively by the HyperForum foundation.

HyperStudio works in close co-operation with HyperWerk.

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Systema Informatics S.A.

Established in 1992 as a software develop-ment company Systema Informatics addres-ses the Information Technology Market. The company develops custom multimedia solutions for the private and public sectors, mainly in Greece and the European Union. Systema Informatics has particular expertise in the areas of Virtual Reality applications, e-Learning, e-Business, and Digital Imaging.

Project coordinator

Constantinos Davarakis (Ph.D)
Constantinos Davarakis worked as a Research Fellow and Post-Doctoral Researcher, between 1985 and 1993, within the Computer Technology Institute of Greece. During this time he participated in several National and European Projects. In 1992 he co-founded Systema Informatics, and has the position of the Managing Director.
He has been elected to the Board of Directors of the European Multimedia Forum four times. He is a member of a Committee for Research and Development of the Association of Informatics and Telecommunication companies in Greece.
He is a founding member of the Greek scientific Association for e-Learning technologies.
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Houot agencement
Conception et réalisation d'espaces commerciaux

Houot Agencement

Founded in 1964 by Claude Houot, Houot Agencement specializes in the design and creation of retail outlets. It employs 26 experts and, in 1999, it had an annual turnover of FFR 33 mio. Houot Agencement is a member of the IGAE Group. This is an association of seven regional companies specialised ingeneral shop design and forms a network that guarantees nationwide cover.
The agency's major markets include retailers, chemists, jewelers, food retailers, banks and services, shoe shops, clothes shops, tobacconists and newsagents.

Project coordinator

Vincent Houot
Vincent Houot holds a Baccalaureat Architect DPLG certificate. He worked as an architect from 1993 to 1997. He has been General Manager of Houot Agencement since 1998. He is also General Manager of IGAE Group, concentrating on development in the field of franchise commerce.
He was a temporary lecturer at the School of Architec-ture at Nancy, France from 1994 to1997.
Vincent is currently an active member of the board for the French Council of Chambre of Agencement since 1999.
He is also the architect and co-founder of the HAHA hyper architectures.
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