

Workshop Report

Workshop on Intelligent Environments for Public Space

Role of Digital Technology in enhancing peoples' experience of public space.



Introduction

1. This workshop brought researchers, industry and key opinion formers together for an evening to explore the impact of emergent technologies on user experience in public spaces.
2. The workshop explored how technology may impact on user experience of public space and the value of multi-disciplinary approaches in the design and planning of space to maximise the positive impact of emergent technologies. Over 100 participants attended including academics, practitioners and students from a wide range of backgrounds including Architecture, Electronics, Computing, Social Science, Urban Planning, Design, and Geography.
3. The workshop on Intelligent Environments was hosted by the Intelligent Media Initiative (IMI), a partnership between Imperial College, University College London, University of the Arts and King's College London. The overall aim of the IMI is to bring together London's top creative, scientific and technological expertise from both academia and industry to work collaboratively in the emerging area of intelligent media, enabling the full potential of IM to be realised in terms of its economic and social contribution to society.

Key Note Presentations

4. Three guest speakers provided different perspectives on the topic (see IMI website for presentations):

Robin Manning

Futurologist ([recent article](#))

BT

5. Robin mapped a number of the technological drivers that are likely to impact of technology on our lives in the future (full presentation attached):
 - *Ubiquitous computing* – the ability to 'know where you are' and the whole area of positioning technology could be as important in the near future as the mobile phone phenomenon.
 - *Enhanced Storage and accessibility of data*: Within the next 20 years we could be carrying electronic devices that contain *all the information we could ever need*.
 - *Smaller and more mobile*: Already technologies are available which enable forensic scientists to have in effect a 'lab on a chip'.
 - *'The internet of stuff'*- where electronics first sense (e.g. tags/card readers), then analyse the information then act on it.
 - *Haptics* – the technology of touch where people can remotely hug and cognitive radio will be the next big technology areas,

6. Spencer explored the role and impact of crime-preventing technologies such as CCTV, swipe access cards, and tagging in their role as guardians against crime. Headlines included:
 - Although the Government has spent over £210million between 1994 and 2003 on CCTV it has had limited success – with one operator to 20 cameras data cannot be analysed and acted on quickly enough.
 - To understand the problem the security services need good quality data.
 - The use of hand held devices will increase – currently community data can be collected by a PDA and acted on quickly to prevent crime e.g. an abandoned car is reported and removed before it can be torched.
 - Security measures can be introduced ‘with style’ such as ornate grilles on shopfronts and restaurant seating designed with handbag hooks – a good example of ‘design against crime’.

7. Usman focused upon reframing the entire discussion about the role of technology, the definition of public and private space and user. He questioned the idea of ‘public space’ – and proposed the use of the “commons” as areas of space owned by everyone. Something about the a
8. Private space is rare – even wireless networks intrude from neighbouring flats and he proposed a concept of ‘the space of absence’ – an umbrella- type shield of private space. His artworks are participative - Open Burble involved 100 people and thousands of balloons controlled by mobile phones.

Trends/Themes

9. After the presentations the speakers were joined by three panellists Stephen Gage; Paul Ekblom and Stefan Rüger. The discussion was chaired by Katharine Rabson (Director of Business Development at King’s College). Emergent themes from the discussion included:

Framing the discussion

10. Strengthening Social Communities through technology and systems

The panel explored how social communities and place come together and the influence an active social community can have on experience. Examples included the impact of outdoor dining in reducing crime and enhancing the feel good factor. Issues included:

- Reference to web-based community sites where active contribution, editing and debate is possible and encouraged and which over time evolve into stable, usable and positive social networks.
- The emergence of new creative opportunities created by these systems to enable people to blog, comment, search for information and share when active in public space.
- The role of technology as a mediator between members of the community – communities monitoring security cams.

Possible Projects: *We could look at projects that use technology in novel ways to facilitate the creation of engaged communities in a space. This could involve communication technologies, but also location-based systems and information systems with the aim of creating systems that enable ‘communities’ to develop and share more in public space.*

11. Role of technology and automation in enhancing security in public space

One of the problems of new sensing or surveillance technologies is that they will generate a huge amount of data that will need to be analysed in order to be useful – an example is the CCTV officer who has to simultaneously monitor 20 cameras. This problem will also apply when environments will capture more information about their usage.

Possible Projects: We could look at creating projects which explore application of pattern recognition, data-mining, artificial intelligence, image recognition and others to the task of increasing automation of security applications, in particular the prediction of crime. This could include data sources from individuals within a public space.

12. The impact of intelligent design

Theft of high-value portable devices was identified as a fast growing problem in public space. The panel discussed possibilities to design objects and systems that minimise the value of individual items to thieves as a way of increasing security. Good design of objects, space and public interfaces can also enhance user experience.

Possible Projects: We could develop projects which explore the value of portable devices to an owner and a thief. This theme could look at ways of personalising access to devices, using wireless connections to separate the device itself from the data stored on it, and other possibilities.

13. Encroachment and User Appropriation of Technology

A recurrent theme was how to overcome the ‘fear’ of introducing new ‘intelligent’ technologies into public space situations. This is a general problem with new and unknown technologies in general (e.g. GM Crops and Nanotechnology debates). However, the problem may have aspects that are particular in this application field of the ‘public spaces’.

Possible Projects: We can envisage projects which help developers and the public to understand, communicate and generate a useful debate about the positive potential of the adoption of ‘intelligent’ technologies in public spaces.

Follow Up

14. The IMI aims to create a community of practitioners across all disciplines in an attempt to encourage universities and industry to work across-discipline and professional boundaries. The Intelligent Media Initiative Business Development Team will actively follow up project ideas/networks and will provide ongoing support in developing projects- setting up meetings or investigating funding opportunities in support of this vision.

15. The diagram below provides a map of different types of follow up activities that the IMI can support:

Type	Participants
Evening Event	Academics/Post Grads
Mapping workshop	Academics/PHD/Business
Project workshop	Academics/Business
Network	Academics/Business/PHD
Wiki online	Open to attendees

16. Complementing the themes outlined above, ideas emerged in relation to different real world scenarios each with their own particular physicals, social and psychological issues/needs:

Scenarios
Hospitals
Urban space
Cultural Space (museums)
Shopping Spaces

17. We look forward to your feedback; on themes or projects that you would like us to develop in partnership with you? Do you think there is the need or desire to have further meetings or events on particular themes that came out of this discussion? Are you working in this area and looking at developing your collaborations?

18. Please come back to us with your ideas about how we can develop this theme into projects (via web address or directly with Business Development Managers – contact details noted below).

Relevant Funding Opportunities

- The **DTI Technology Programme** Autumn 2006 Competition will launch on 2 November 2006 www.innovate2006.co.uk
- **AHRC and EPSRC** Network Grants
- The DTI has announced '**Electronics and Photonics: Sensors and Imaging for medical, security and environmental applications**' as an **priority area for Collaborative R&D Funding**.
- **Network Security Innovation Platform:** The Human Machine Interface in Network Security (Feasibility Studies):
 - *Support for projects that address the challenge of effective communication of security to the non-specialist user and new systems and environmental design to reduce insider fraud.* This is a 'challenge-driven' approach, encouraging consortia to focus on achieving solutions to a societal challenge.
 - *Support will be in two stages* - initially through supporting short feasibility studies, the best of which will be selected, leading to long-term collaborative research and development projects, with the ability to make significant change.

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