

Technology and Social Action

Proposal for a half-day workshop at PDC 2006

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ABSTRACT

This workshop aims to bring together campaigners, practitioners and academics to examine the use of technology by the organisations of civil society. Democratic participation in civil society is not merely an issue of electronic voting, but also of campaigning, organising and participation in policy formation through a wide variety of groups and organisations. These groups may be formally constituted such as trade-unions, political parties, or campaigning 'non-governmental organisations' (NGOs), or may take the form of informal collections of individuals and organisations conducting conversations and distributing electronic material e.g. email petitions, and recent emails circulated by supporters of the 'Stop the War' coalition. Many of these groups are by their very nature highly participative. The workshop will explore how ICTs are incorporated into such participative practices and the implications for the participatory design of both organisations and technology.

WHY A WORKSHOP

The motivation for this workshop originates in a UK research network established in 2005 under the title 'Technology & Social Action' (Technology and Social Action, 2005). Early rhetoric surrounding the internet presented utopian visions of a 'Global Village' where 'everyone' would have access to the world's information resources. The MIT's '\$100 laptop' project is a contemporary example of such thinking. As many are now aware, however, the reality that develops may be very different.

The internet has opened up a range of opportunities for a range of progressive social movements and organisations. Groups promoting: (for example) women's rights, human rights, disability rights, community development, third world development, industrial democracy and more recently anti-globalisation and global justice groups are all developing ways of using technology to further social ends, as have others with less desirable ends such as hate

groups and a variety of cults.

The use and development of information systems amongst these groups raise both practical and theoretical challenges for PD. We know that social and organisational context are critical in designing appropriate technology. Therefore, methods that have been developed to focus on the use of ICT in the work place may not be directly appropriate to support these groups in their use of ICT.

The needs of such social movements differ from industrial applications of ICT because they:

- rely heavily on the work of volunteers who are not professionally trained in their area of work;
- may involve groups of individuals who are very widely distributed with limited opportunities for face-to-face communication;
- exhibit complex interwoven value systems beyond commercial profit and 'efficiency';
- typically suffer from extreme shortages of time and resources;
- often aim to reach individuals with limited access to information and communication technology (e.g. in developing countries, in disadvantaged areas of the developed world, or people with disabilities or suffering other forms of social exclusion).

This workshop aims to bring together the expertise researchers and practitioners involved in the design, delivery and use of ICTs support social movements.

THE AIMS OF THE WORKSHOP

This workshop posits a number of key questions for practitioners and researchers. Some of these questions are below.

- How can we design systems to enable and encourage fair access and participatory democracy in a world of computer mediated communication and digital divides?
- Which techniques are appropriate for developing or choosing tools to support such movements and organisations, and is there a need to develop new methods and techniques?

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- What kinds of design and development tools can be made available for (generally inexperienced) volunteers to make best use of available technologies?
- How does engagement with electronic campaigns relate to ‘real world’ activism?
- How might practitioners maximise the impact of electronic tools on their campaigning goals?
- What are the challenges in countering undesirable developments, e.g. campaigning by racist or sectarian groups, and how might this differ when computer mediated methods are used?
- Can open-source be used to support such groups, without technical and usability challenges undermining dissemination?
- How can campaigns integrate electronic and physical information systems to maintain involvement?
- How can social movements organise across boundaries of language, organisations and culture?
- How does the globalisation and computerisation of campaigning impact on the developing world?
- How might different developments of internet governance arrangements and intellectual property rights relate to such groups?

WHY A WORKSHOP AT PDC 2006?

Participation is a central value of many social action organisations and movements. Despite this, engaging practitioners, designers and researchers across disciplinary and sectoral boundaries raises substantial practical issues of method and value.

The workshop will review the work of a UK research project ‘Technology and Social Action’ in an international setting, aiming to test findings against experiences from elsewhere. We shall also consider what

progress has been achieved through the recent World Summit on the Information Society (WSIS)?

WHO SHOULD ATTEND?

The workshop is aimed at practitioners, designers, campaign organisers, activists and researchers who are:

- involved in designing for, or supporting NGOs, trade-unions, community, campaigning or voluntary groups;
- concerned with the relationship between ‘the network society’, democracy and the capabilities of socially excluded groups and people in developing countries;
- interested in understanding the impact of electronically mediated communication on the development of civil society.

WORKSHOP STRUCTURE

Participants in the workshop will be asked to make a short presentation of their positions. This will be followed by collaborative working to explore and collate issues raised by the participants.

The expected output will be a series of challenges and questions that will be put to the wider PD audience at the conference in the form of a poster to stimulate discussion during and after the conference.

REFERENCES

1. International Telecommunication Union, 2003. World Summit on the Information Society. Details available from <http://www.itu.int/wsis>
2. Technology and Social Action, 2005. www.technologyandsocialaction.org

Innovation Play: Visualization and Storytelling for Engaging Participation in Design

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WORKSHOP AIMS AND GOALS

In this workshop we will explore the use of mapping, role-playing, props and storytelling to envision an ideal end user experience that can serve as an inspiration, or generate concept evaluation criteria for a design team. The methods are useful for designing physical and virtual spaces, services and some kinds of information architecture.

Keywords

Design methods, innovation play, visualization, storytelling, user participation.

INNOVATION PLAY & VISUALIZATION

Visualization exercises to explain abstract topics can help designers understand how people are making sense of the world, uncovering a range of design factors from physical to social and emotional factors, while exploring the ways that diverse worldviews and imaginaries inform the understanding of the design topic or design problem at hand. Concepts informed by an understanding of what will feel relevant, understandable, and evocative stand a greater chance of being not only usable but delightful to the people for whom they are designed. Story-telling and evocative artifacts can help create a design vocabulary in the absence of comparable analogies. Creative exercises inspire active engagement from people through visualization, role-playing, artifact creation, and storytelling.

PERCEPTUAL LANDSCAPES

Adapting social science methods, designers can engage people in visualizing from memory physical or virtual spaces that are familiar to them. Comparing and contrasting 'mind maps' (cognitive maps, mental models) to existing, real-world contexts helps to gain understandings of perceptual differences and discern cues in the existing environments that are shaping the experienced space. Aspects such as scale, proximity, color and detail begin to

describe the values, interpretations and opinions formed about the environment, as well as navigation paths and way-finding issues. Starting a design process from an understanding of people's experiences in a space is useful for a team designing to support changing activities in the context and learn from people's workarounds and creative adaptations. This method is inspired and informed by the humanist geography of Yi-Fu Tuan, in particular his concept of "Topophilia," according to which landscape can "be defined widely so as to include all emotional connections between physical environment and human beings." The method also builds on techniques developed by researchers and designers at IDEO over several years, which are documented in the IDEO methods deck.

EXPERIENCE MAPPING FOR INNOVATION

Increasingly, designers are asked to do work in envisioning new-to-the-world services, environments and products. Created with an expectation of causing existing behaviors to migrate from physical or familiar contexts to virtual or new ones, often on new tools, capabilities or technologies will need to be adopted to get things done in ways that people have not yet experienced. As the options for what to make, and the ways to control and shape our environment expand, the question of how to best support the human needs that are independent of context comes to the forefront. Designers need the ability to discern which aspects of behavior are a result and adaptation to existing limitations from needs that are more timeless, in order to shape new capabilities for solutions that are as yet unfamiliar.

Using ideal landscapes and storytelling to describe future experiences and imaginary worlds can bring possibilities to life and help designers to uncover and refine understandings of the potential uses, attitudes, and interactions that new products, services, virtual and physical spaces need to support.

Involving end users in collaborative storytelling, artifact creation and role-playing allows people to articulate needs and imagine futures that are specific to them, and can guide a team with design principles or an 'experience blueprint'

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as they later explore options for implementation. Creating and using artifacts as props can help people think about use and behaviors in more specific ways, and offer a shared language to express possibilities through the more familiar grammar of the sensory, tangible aspects of the three-dimensional world.

HANDS-ON EXPERIENCE

The goal of the workshop is to have hands-on experience with two design-oriented methods that engage user participation through visualization, mapping, role-playing, creation of props, and storytelling. Materials to create props will be provided. Participants will share the outcome of a short creative exercise with the workshop group.

WORKSHOP PROGRAM

Continental breakfast: 8-9:00

Introductions: 9-9:30

Visualization/Mapping & Storytelling Exercises: 9:30-11:30

Discussion: 11:30-12:00

INTENDED PARTICIPANTS

The workshop is intended for anyone involved in the design of physical, virtual or information spaces, new products or services.

MAXIMUM NUMBER OF PARTICIPANTS

In order to allow workshop participants to present and try out engaging user participation with inspirational artifacts and other props, the number of participants is limited to 20.

WORKSHOP ORGANIZERS

Gitte Jonsdatter, a User Researcher at IDEO, works with design teams to improve spaces, products and services through developing understanding of people's use of the space, needs and desires.

Judith Gregory currently works at the Institute of Design in Chicago, where she has responsibility for the area 'Understanding Users' and for doctoral design research. She is also a member of the faculty of the Department of Informatics, University of Oslo and has worked in the Oslo School of Architecture and Design.

REFERENCES

1. Tuan, Yi-Fu. *Topophilia*, 1974, Prentice Hall
2. IDEO Methods Deck, 2003, William Stout Architectural Books

Elito: A Method for Practicing Research-Based Design

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BACKGROUND

As qualitative research-based designers, it is imperative that our concepts for new products and services be derived directly from our ethnography and participatory design activities. This is our significant contribution, it's what distinguishes us from designers who rely solely on intuition, marketing or stylistic trends. In industry, however, it can be challenging to practice the ideal research process. One reason is that teams are often multi-disciplinary and lack a shared vision of how to accomplish this type of design. Project teams and the people they invite to ideation sessions may generate ideas before research has been properly analyzed, or worse, without any regard for the research at all. Presenting qualitative research is itself a challenge because audiences often cast themselves into the problem and speculate about their own, more logical, behavior. And as the team grows to include marketing, business and engineering, trade-offs are made with little knowledge or real understanding of the initial qualitative research that inspired the concept.

WORKSHOP GOALS

This workshop will introduce participants to a method called Elito that helps teams develop and communicate connections between primary research and the concepts that result. Participants will get hands-on experience using Elito to capture observations, develop relevant concepts, and to present their design stories. Participants will leave the workshop able to apply the method to their own work. Tools for future practice of the method will be provided.

I am interested in sharing the method to grow the community of practitioners. As designers, anthropologists and researchers have adopted Elito as part of their professional practice, the method evolves. I am interested in this evolution and what the changes imply about the practice of research-based design. Participants will be encouraged to share their reflections about the method if they use it professionally.

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WORKSHOP FORMAT

The Elito workshop will be 4-hour design session. Participants will be grouped into teams of 3-5 people and I will each assign team a phony company. The teams will then watch a short observation video from the perspective of creating a new product or service for their company. They will spend 1 hour discussing and documenting their observations, judgments, values and concepts based on the video and their company's point of view. In the next hour, each team will craft logical design stories to share their ideas with the rest of the group. They will use metaphors to tie a story together and explore story-telling formats for their new idea. Each team will then present their design stories to the rest of the group. The session will conclude with a general discussion about Elito as a method.

ABOUT ELITO

Elito is a method used in the early stages of innovation as design teams conduct user research, identify patterns and develop novel concepts for products and services for an organization. It best serves project teams of 3-5 people and has been used in developing new products, services, and strategies.

Elito is a simple rhetorical structure that houses observations, judgments the team makes about those observations, the human value interpreted from the observation, and design criteria or concepts based on those values. Using Elito, teams craft compelling design stories that focus attention and resonate with broad audiences. Metaphors are used both as a memory trigger for teams while they develop ideas, and as a mechanism to deliver compelling design stories that engage audiences. Teams are able to articulate and defend the logic behind their research-based concepts because the architecture of the concepts is completely tied back to the inspiring observations.

Understanding the architecture of a research-based design concept aids teams as they move from observations to developing concepts and into an actual product development environment. It makes the research-based design process clear for the teams as they are in it, and it makes it easier for them to share their work throughout the process and as it transfers occur to other departments.

Elito was developed in 2002 at the Institute of Design by Margaret Alrutz, Ben Singer and Trysh Wahlig. Design

Research Society first published the method in 2002 in the Common Grounds Proceedings. It is currently taught and practiced at the Institute of Design, Carnegie Mellon, Steelcase, Pitney Bowes, and IDEO.

HALF-DAY SCHEDULE

30 minutes: Introduction to Elito, background and tutorial

30 minutes: Teams of 3-5 people are selected. Each team crafts a charter for a phony company and watches observation videos (provided).

60 minutes: Each team documents observations, judgments, values and concepts based on the video and their company charter.

60 minutes: Each team selects a design story to present to the group. They prepare a story by assigning metaphors and deciding on sequence.

40 minutes: Teams present and discuss their design stories.

20 minutes: Group discussion on Elito.

REFERENCES

1. "Developing a Method to Support Human-Centered Designers in Forming Arguments: Intertwining Practice and Theory." Design Research Society: Common Ground International Conference 2002. Ed. David Durling and John Shackleton. Stroke-On-Trent, Staffordshire University Press, 2002. Written by Alrutz, Singer and Wahlig
2. "Using Elito," a tutorial for new practioners to use and share the design process. (Site also includes other research and link to the published paper.) <http://www.id.iit.edu/ideas/elito/0Overview.html>

Collaborative Scenario Planning Tools, Methods and Use

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KEYWORDS

Futures thinking, future scoping, scenario planning, Interactive TV, changing media landscape, transformation design, trends analysis, drivers for change visualising futures, collaborative story telling, user-centered design tools. Innovation

ABSTRACT

During a full day workshop we will explore the methods and value of scenario planning within design-led innovation. We explore how to bring scenarios to life through design and storytelling methods and how to use these scenarios in workshops designed to generate and evaluate new service ideas. Workshop sessions will guide participants through using a toolkit developed by BBC Creative Research and Development, which helps people develop, illustrate and use scenarios in both creative and strategic workshops. These scenario stories were developed collaboratively by teams inside and outside the BBC to explore future the media landscape of 2014. The focus is on the future of Interactive TV but considers, social, political and economic factors as well as that of networks and devices, the future of content and audience behavior.



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BACKGROUND TO SCENARIO PLANNING

Planning for the future is problematic. We cannot map the future but we can play an active role in shaping a better future. The challenge is how to plan new products and services in a world of increasing complexity and rapid change. Scenarios are a set of alternative visions of the future, which show how each possible future was created by events and forces for change. Scenarios are not projections or predictions – they are stories built on both analytical and intuitive thinking, on fact and fiction. While they are deliberately challenging and designed to be confront our assumptions about both present and future, they are also designed to be plausible and credible. Scenarios are built on expert opinion of how past and present is shaping the future.

Relevance to PD

Scenario Planning is a valuable aid to design-led thinking. Scenarios bring to life potential futures and help people to understand the implications and consider different design responses. Scenario planning benefits greatly from the input of multiple perspectives and through the contributions of people at all levels of an organization. As a process scenario planning helps diverse participants acquire a common language for talking about current events and future uncertainty. Often organizations suppress uncertainties about the future – scenario planning often uncovers these implicit assumptions and provides a new structure to help make decisions. Designers and decision makers can use scenarios as a tool for understanding, debating and better decisions making. In the workshop we will explore how many of the tools and techniques used in scenario planning can be applied to various stages of the design cycle.

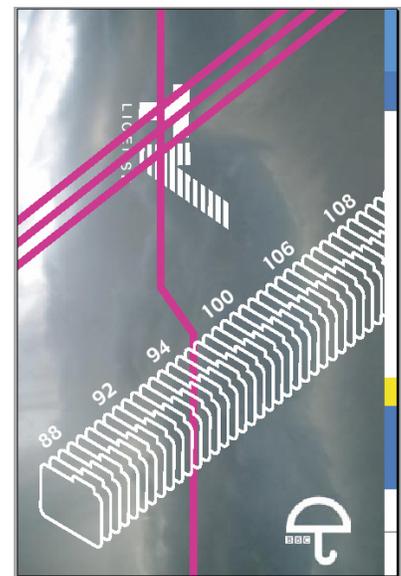
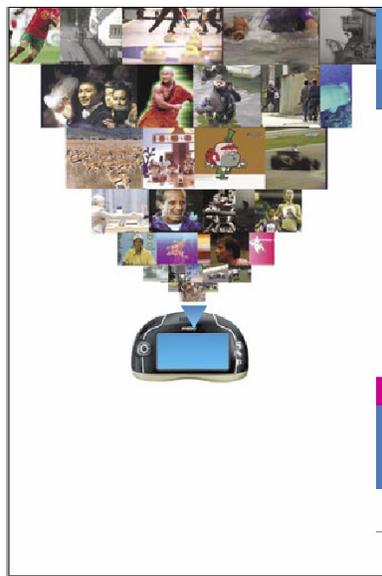
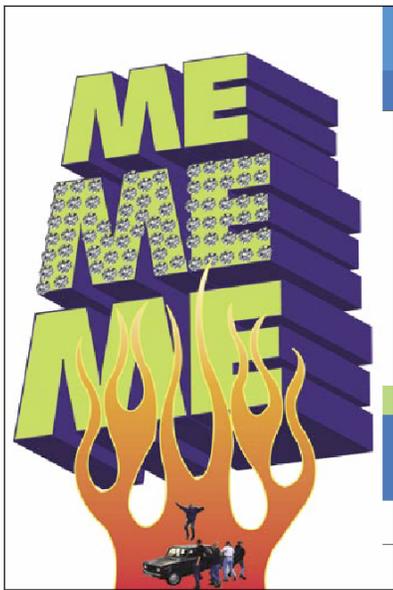
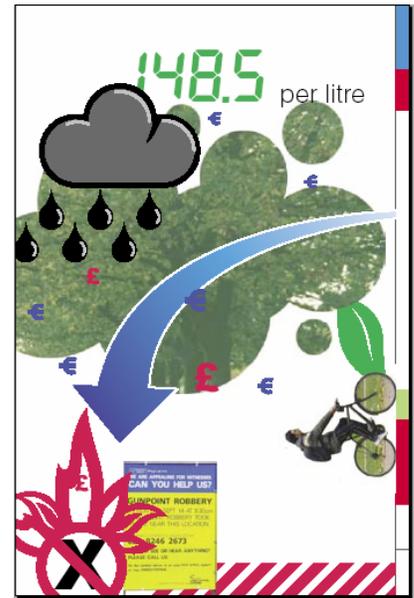
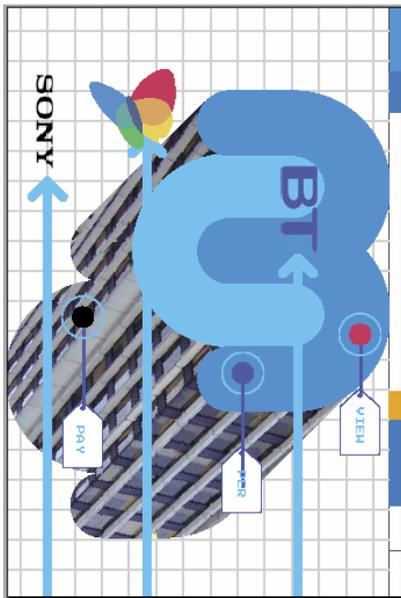
Workshop Format

The workshop will include short presentations mixed with active small group and plenary sessions. Techniques used will include decision-making, voting, clustering, storytelling, brainstorm, ideation and elevator pitching. There will be an overview of what scenario planning can and can't deliver, and for what type of problems it is most useful. We will explore techniques for prioritizing a number of forces driving global change - (technological, social,

political, environmental, economic) and how they are combined to create the building blocks of scenario stories. We will then demonstrate numerous ways of bringing scenario stories to life - techniques designed to help people really understand what life could be like in the future – photo storyboards video ‘mocumentares’, first person narrative, role play, tarot-like cards, relationship mapping, character cards, daily life clocks, cultural probes of the future and imagined street scenes. Another session will give participants the chance to actively use the BBC scenario planning story cards to understand the implications of a future scenario for end-users and then to develop and pitch appropriate new service ideas.

Organiser’s Background

Anne fairbrother is a Research Manager in BBC New Media Innovation – a team whose remit is to assist the BBC in its innovation strategy and practice, applying research and development expertise to areas of future interest in the new media and technology field. She led a pan BBC project commissioned by interactive TV to consider how it might adapt it’s commissioning strategy to meet the needs of future audiences. Currently she is applying futures thinking methods to a collaborative project aiming to create mass participation in environmental campaigns using pervasive technologies.



Translating Representations of the Past to Representations of the Future

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INTRODUCTION

Representations play a central role in participatory design projects. Ethnographic accounts are used to understand practices we are designing from and sketches, scenarios, mock-ups, games, etc. are used to envision future practices we design towards. In between representations of the past and the future, we represent the design process itself in order to facilitate participation, collaboration and progress in activities. Thus, representations are pervasive, but not all representational artifacts perform in the same manner. They have different collaborative affordances depending on their material form; they have different representational capacity depending on their medium; they possess different imaginative potential depending on their associability, and finally representations translate more or less easily into new representations depending on their veridicality and inevitability.

GOAL

Under the headline of "translating representations of the past to representations of the future", the aim of the workshop is to explore the performance of different types of representational artifacts (photographs, video clips, sketches, field notes, profiles) in relation to some or all of the characteristics mentioned above. To keep the workshop relevant and focused we plan to draw on participants' own experiences with representational artifacts as well as on hands-on experiences with representation in the workshop.

METHODS

We will work with concrete material from two design projects: one in a corporate setting, one in a community setting. Each discussion throughout the day will be grounded in an engaging activity with input from prepared material and participant experience. Some of the key questions we wish to address are:

- How can representational artifacts support design activities, which are simultaneously grounded in and

transcending existing practices?

- What makes representations open for contributions by participants?
- How are certain purposes delegated to representations?
- Which descriptions make a difference? Why are some representations transforming, additive, displacing and transgressing, while others simply state the obvious?
- What do we make of validity and truthfulness when representations refer both to the past and the future?
- How do representations succeed each other in the course of a design project?

RESULTS

Besides being a stimulating and engaging day for the participants, we hope the output of the workshop will be both a more clear and complicated understanding of the role representations play in our participatory design activities.

INTENDED PARTICIPANTS

Any individual with interests in the creation, use, and value of representations in participatory activities.

ORGANIZERS

The workshop is organized by three PhD students working in Scandinavian participatory design settings. This workshop is one in a series of discussions in relation to the topics of design games, design ethnography, and participatory methods.

WORKSHOP SCHEDULE

9:00 – 10:15 Personal introductions, and discussion of main issues & questions (participants will introduce own representational artifacts)

10:30 – 12:00 Design Game I

Discussion of representational artifacts involved.

1:00 – 2:15 Design Game II

Discussion of representational artifacts involved.

2:30 – 4:00 Representational analysis activity

Analysis & discussion of various artifacts: their abilities and performativities, differences and similarities, strength and weaknesses.

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Participatory Design Projects and Working Styles

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GOAL

Participants in participative design (PD) projects are supposed to represent interest groups with common goals. Based on the experiences of the participants of the workshop we want to identify relevant aspects leading to conflicts between members of one interest group. We introduce working styles as a concept to reflect on conflictive situations in PD-projects. It helps to analyze similarities and differences among members of an interest group. The concept can also be used to prove the composition of PD-project participants or to select a team for specific tasks. Based on the results of the workshop participants are invited to reflect on their own working styles.

METHOD

Workshop participants will reflect on their experiences in PD-projects. They discuss and structure them using large format paper, colored paper, markers and other office supplies. They can also present their findings in scenes.

DESCRIPTION

Participative Design Projects involve representatives of relevant interest groups in their technology projects. They assume common interest in such groups. Our research results on the every day working practices of software developers in small software companies show further differences within these groups. For example, each software developer creates his/her own working style. We conceptualize them as individual working styles. In the workshop we want to explore the experiences of the participants with PD-projects. In a first step participants reflect on their experiences: Which persons have been involved? On behalf of which interest group did they act? The interest groups that have been involved in PD-projects will be analyzed further: Which similarities and differences did the workshop participants experience in the understanding and acting among the representatives of one group? Which were the reasons for the differences? At this

step, workshop participants discuss occasions when conflicts occur among the members of a specific group. They analyze these conflicts systematically in sub-groups pointing out the themes of the conflicts, possible reasons for it and underlying assumptions. In a next step, sub-groups present their results. Finally we introduce our concept of working styles as an additional analytical method to reflect conflictive situations in PD-projects. It can be used to prove the composition of PD-project participants. The reflection on working styles will help to select teams for specific tasks or to understand own priorities and practices.

SCHEDULE

- Introduction to the workshop: Goal, methods and schedule. (ca. 10 min)
- Personal introductions: Who are you and which are your experiences in participative design projects? (ca. 20 min)
- Identifying relevant interest groups based on the personal introductions. (ca. 10 min)
- Breakout sub-groups according to the workshop participants' interests: Each sub-group will explore a specific interest group, such as users or developers or the like. What had the individuals belonging to this group in common? Which differences became important in the process? Which discussions arose among the members of the interest group? Where lay possible reasons for the conflicts? - Each group will prepare a poster using office supplies and/ or a scenic play to present its results. (ca. 1h 20min)
- Sub-Groups present their findings. (ca. 20 min)
- Presentation of workshop organizers: Working styles as additional concept to analyze differences in working and perspective between individuals. (ca. 10 min)
- Individual reflections on the own working practices. (ca. 30 min)

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Agent-Oriented Analysis and Design for Participatory and User-Centred Design

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GOALS

Agent-Oriented (AO) modelling for system design borrows the Multi-Agent System paradigm from Artificial Intelligence [3].

In this perspective, a system is represented as a set of active entities (agents), each one having its own goals and behavior, and interacting with each other in order to achieve common objectives [2]. Heterogeneous (human - system) organizations can be modelled within the same paradigm.

The idea is that agent-oriented methodologies, which are founded on notions such as those of agent, goal and plan, support intentional analysis. In other words, they allow to model explicitly the reasons behind the needs of the application domain stakeholder, as well as the motivations for system requirements.

In particular, the *Tropos* methodology [1] elaborates on this idea and proposes a requirements driven software development methodology, recognizing a crucial role to the early phases of system requirements. In these phases, the analysis focuses on the understanding of a problem domain by studying the existing organizational setting, where the system-to-be will be introduced. Social actors and software systems that are already present in the domain are modeled as actors with their individual goals and with mutual, intentional dependencies.

The *Tropos* methodology provides a visual modelling language which allows to build views on the network of interdependencies among actors (actor diagrams), as well as to describe and support the means-ends analysis conducted by each actor as it attempts to ensure that — through delegations to other actors — its goals will eventually be fulfilled.

Considering the Participatory and User-centred design approaches, on the other side, they both give a central role

to potential users (stakeholders) of the system-to-be, even if they propose different ways to involve them in the system development loop. Stakeholders objectives and their social dependencies are not modelled explicitly, as in Agent-Oriented approaches (a la *Tropos*), but they are still taken into account. In Participatory Design, user's goals are not mediated by a model. In that approach, the user is participating in the design process, thus reducing the need for a formal model of goals and intentions. Nevertheless, a formal model is still needed in system development and testing.

Based on the above considerations, we propose a discussion on the topic of using AO modelling in supporting and enhancing Participatory and User-Centred Design. From the Participatory and User-centred design point of view, AO modelling can be seen as a way of formalizing the phases of requirements definition. While from a point of view of AO modelling, Participatory and User-centred design can be seen as complementary techniques with respect to current AO approaches to system development.

The workshop will foster the discussion of peculiarities and commonalities of Participatory design and User-centred design and on how agent-oriented approaches can support the design process of such systems.

The ultimate goal of the proposed workshop is to produce one or more seminal papers on "Agent-Oriented analysis and design for Participatory and User-centred design".

METHODOLOGY

The call for participation will include a short description of agent-oriented software engineering methodologies, links to introductory material, and a list of issues we'd like to discuss during the workshop. Participants will be requested to submit in advance a position paper or a statement of interest, which will be circulated before the workshop.

The session will be opened by three short lectures on agent-oriented methodology for analysis and design, User-centered design, and on Participatory Design. After this first session, the core of the workshop will be organized as brainstorming using the affinity diagrams' technique. The brainstorming session will be interrupted for lunch, but we will offer the participants the option to have lunch together. The last session of the day will be devoted to the collaborative writing of a first draft of one or more joint papers. In order to allow

close interaction between participants, the attendance will be limited to a maximum of ten participants.

SCHEDULE

The proposal consists of an interactive workshop lasting a full day.

- *First Session* - Three invited presentations of 30 minutes each.
- *Second Session* - 90 minutes of brainstorming, inspired by the invited presentations and the position papers of the participants.
- *Lunch Break* - Participants will be encouraged to continue the discussion over lunch.
- *Third Session* - 90 minutes of brainstorming, progressing towards the identification of relevant connections between the different areas and views.
- *Fourth Session* - 90 minutes of recap session, with the goal of producing one or more first draft for joint papers between the participants.

REFERENCES

1. P. Bresciani, P. Giorgini, F. Giunchiglia, J. Mylopoulos, and A. Perini. Tropos: An Agent-Oriented Software Development Methodology. *Autonomous Agents and Multi-Agent Systems*, 8(3):203–236, July 2004.
2. N. Jennings, K. Sycara, and M. Wooldridge. Roadmap of Agent Research and Development. *Autonomous Agents and Multi-Agent Systems*, 1(1):7–36, 1998.
3. Nicholas R. Jennings and Michael J. Wooldridge. Applications of intelligent agents. In Nicholas R. Jennings and Michael J. Wooldridge, editors, *Agent Technology: Foundations, Applications, and Markets*, pages 3–28. Springer-Verlag: Heidelberg, Germany, 1998.

PaperWorks – Designing for Paper Technologies

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ABSTRACT

Over the years it has become evident that the paperless society, let alone the paperless office are not realistic scenarios. In fact the production of paper has increased. The research project PaperWorks is concerned with merging digital technology and paper; to bridge the two domains and to enhance the affordances of both domains. In the project we explore the possibilities of existing as well as future technologies, in a wide range of new use contexts, in order to develop application prototypes.

For the PDC conference we propose to make a full day workshop.

Author Keywords

Paper and pen based technology, ubiquitous computing, and participatory design.

ACM Classification Keywords

H5.1, [Multimedia Information Systems]: Artificial, augmented, and virtual reality.

H5.2, [User Interfaces]: User-centered design.

INTRODUCTION

The PaperWorks Project is a European project with partners in United Kingdom, Sweden, Switzerland and France, [1]. The emerging paper based technology is the key focus of the project. PaperWorks is proceeding the research project Paper ++.

Our current research contexts in PaperWorks are areas such as learning, engineering industry, theatre and film production and auction houses.

PAPER BASED TECHNOLOGY

We are working with both existing and future technologies, developed by the companies Anoto, Acreo and Arjo-Wiggins; all partners in the PaperWorks Project. This involves the use and development of sophisticated inks, papers and substrates, complex coding and detection systems, software and information architecture, as well as

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Figure 1 A prototype

novel work in product-, information- and interaction design.

THE PAPERWORKS PROJECT

As the main focus of the project is to identify user contexts and develop application prototypes, we operate in a number of different contexts. Most of the current work is in progress and hasn't been published. For further information we therefore refer to the PaperWorks website [1], and work done on preceding projects [2, 3, and 4].

PARTICIPATORY DESIGN

Participatory design methodology is an integrated part of our work process. Both in exploring new contexts and in developing application prototypes, we make use of a variety of PD methods. One approach we are using is ethnographically inspired fieldwork, e.g. using videotaping to capture workflows and other situations. The videotaping does not only serve as documentation, but as design material to be used and negotiated in collaboration with the user group. But the use of methods is shaped and staged for each meeting with colleagues, potential users, and their contexts.



Figure 2 Case 1: Design and learning

FULL DAY WORKSHOP

The goal of the workshop is to develop new ideas around some of the cases we are working with. We will select two or more cases among our current research for the workshop. The primary technology at the workshop will be Anoto technology; digital pen and paper. Anoto technology has already been built into commercial products; offering the workshop participants to actually work with the real technology. Introductions to future technologies will be given as well as the opportunity to work with them on a mere conceptual level. The workshop will be set up as a full day workshop, involving some elements of design gaming, rapid prototyping and scenario activities. Each case evolves around the use of paper and digital technology in a particular context; a particular work situation. We will give the insight to the cases in question, introduce the design activities and provide participants with relevant material for the individual design activities.

The first part of the day the participants will work hands-on in groups on different cases. We will work with three cases. Each case evolves around the use of paper and digital technology in a particular context; a particular work situation or learning environment:

- Case 1: Design and Learning
- Case 2: Coupling between physical objects and digital functionality
- Case 3: Mobile artifacts

After lunch some time will be devoted to work on presentations and we will proceed with presentations and discussion of the collaborative efforts.

POSITION PAPERS

Position papers are not a requirement for participating in the workshop. However, we encourage participants to submit position papers describing their research interest within the area. One of the reasons we would like to receive position papers is in order to design the workshop and make the most of the participants' competencies, as well as taking participants' interests into consideration, so they too may get the most out of joining the workshop.

Please format the position paper according to the SigCHI-template (the same as is used at the PDC 2006 – available from here <http://www.unitn.it/events/pdc06/pf.htm>). The page limit is two pages. The position papers will be published at Paper Work's homepage.

PRELIMINARY SCHEDULE

- 9.00 Welcome and intro
- 9.30 Intro cases and design games
- 10.00 Group work on cases, design
- 12.00 Lunch break
- 13.00 Continued design, preparations of presentations of group work
- 14.30 Presentations
- 16.00 Discussion and evaluation
- 17.30 Closing

LIMIT OF PARTICIPANTS

Due to technical reasons the maximum number of participants is set to 20. In case we reach the limit admission to the workshop will be on a first to come, first to go basis

REFERENCES

1. Official website of PaperWorks. www.paper-works.org
2. Signer, B.: titel på afhandling, trykkestet (uni), årstal. Available at: <http://www.inf.ethz.ch/personal/signer/>
3. Peterson, B.: Tangible Computing in Learning Environments. Promote IT 2005, Borlänge, Sweden. Available at: http://webzone.k3.mah.se/k3bope/tangible_kk.pdf
4. Luff P., Heath C., Norrie M., Signer B., Herdman, P.: Only Touching the Surface: Creating Affinities between Digital Content and Paper, CSCW'04 November 6-10, Volume 6.3, 2004, Chicago, Illinois, USA.

Locating Boundaries: A Workshop on Place, Space, and Design

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INTRODUCTION

While we are "Expanding Boundaries in Design", perhaps we should think for a moment on the significance of boundaries, which are essentially the separation of "this place" from everything "not this place". And what constitutes "this place"?

The cultural meanings of place and space have been the subject of three decades and more of study in disciplines such as social geography, sociology, political science, and anthropology. The social meanings of space comprise subfields in the study of architecture and urban and regional planning, and they are increasingly present in organizational studies. In recent years, design in fields other than architecture and planning and research in support of such design have been paying more attention to matters of place and space (extensive bibliography available on request).

Place and space are social constructs, ways for humans to consider the physical world in which they exist, and as social constructs, both reflect and shape the culture in which they arise. Edward Casey, phenomenological philosopher, argues for the primacy of place. Not only are we always already embodied, he claims, but we are always already emplaced. We are always some place and never nowhere. Despite this experiential reality, our scientific society privileges space. Casey writes, "Once it is assumed (after Newton and Kant) that space is absolute and infinite as well as empty and *a priori* in status, places become the mere apportionings of space, its compartmentalizations." (Casey, 1996, p. 14)

Nor are place and space unitary constructions; they will be constructed differently by different people, different social groups, and these differential constructions are inflected by differences in interest and power as well as culture. This layering of construction creates what may be thought of as place as palimpsest, a layered text with different readings at different levels. These readings do not simply coincide,

either; they may be and often are contested.

FORMAT OF THE WORKSHOP

The intent of this workshop is to bring together researchers and practitioners who have studied place and space and are engaged in exploring the ways in which place and space affect design and the use of technology and the ways in which technology changes the places where it is used. Those interested in learning about place and space and exploring their relationship to design and technology are also urged to attend. Participants are strongly encouraged to prepare one to two page reports on their studies of place and space, similarly-sized position statements on place, space, and design, or both. These may be sent in advance, in which case we will try to post them on a website for participants, or brought to the workshop. Those wishing to suggest games or exercises in addition to those already planned to explore aspects of the natures of place and space are asked to contact the organizers in advance.

The day of the workshop will be divided between exercises and discussions. It will begin with a brief round of introductions, followed by an exercise on location. This is intended to explore differences in awareness of location and the differential meanings carried by the respective terminologies of place and space. The next segment will be the presentation and discussion of participants' reports on their own studies of place and space, either sent in advance or brought to the workshop. The morning will conclude with a game on place, space, and design.

During lunch, participants will encounter places and boundaries in Trento. There will be a directed exercise to do during lunch of attempting to recognize and identify places and boundaries and observing actual or potential transgressions. When we reassemble, the first part of the afternoon session will be a discussion of this exercise and our observations. The next exercise will be on transgressions of place and space, drawing on our observations and discussions from the lunch-time exercise and including the uses and misuses of technology for such purposes. The final segment will be the presentation and discussion of participants' position statements, which is expected to evolve into a general discussion of place, space, and design.

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This workshop is limited to ten participants in addition to the organizers. Registration for the workshop is accomplished during registration for the conference. However, those intending to participate must send e-mail to Julian Orr <orr@workpractice.com>, including a two-page position statement. This will be used to choose participants, if necessary. Reports on previous studies of place and space may be sent to the same address or brought to the workshop. Those with digital cameras should bring them for the lunch-time exercise, or participants may consider how else to register and record places.

REFERENCES

1. Casey, Edward. How to Get from Space to Place in a Fairly Short Stretch of Time: Phenomenological prolegomena. In Feld and Basso, *Senses of Place*. Santa Fe, NM: School of American Research Press, 1996.

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Learner-Centered Design: Developing a Participatory Approach

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INTRODUCTION

Constructivist and social learning paradigms have led to the adoption of learner-centered design techniques in the development of curriculum and instructional environments. However, rarely do actual learners participate in such design processes. Curriculum and instructional design approaches can produce “customized” products—for both formal academic courses and more informal workplace training—that engage learners and promote active, even collaborative, learning. However, during the design process the end users are usually represented by proxies—either conventionally accepted models based on current practice or more research-oriented approaches based on study of representative users.

This workshop will investigate how a user-center design (UCD) approach can be adapted to make learner-center design participatory in the sense of involving actual end users in the design process. The take away will be a preliminary process model and useful strategies to create powerful learning opportunities from the bottom up.

GOALS

During this interactive workshop, attendees will:

- Discuss the characteristics of conventional curriculum and instructional design approaches and what would constitute a more participatory approach
- Identify the challenges and opportunities for adopting UCD techniques in education and training domains
- Try out a variety of methods from known UCD techniques that can help to increase learner input throughout the development process (versus more passive input)
- Produce a prototype process based on the results of the workshop that can be applied in a variety of domains

- Identify areas for future research and practice in the area of participatory learner-centered design

TECHNIQUES FOR INTERACTIVITY

The workshop will combine brainstorming, small group exercises, and facilitated consensus-building techniques to promote interactivity. The workshop itself will model key characteristics of how a participatory learning-centered design process might be implemented. As facilitators of this workshop, we come prepared with a problem at hand and some examples, successful and unsuccessful, of employing participatory design approaches in traditional academic and more informal settings. But we do not have all the answers and look forward to working through some of these issues with the participants themselves.

We hope to act as idea generators with structured exercises and discussion areas that can be a springboard to engage the topics at hand.

RELEVANCE TO PARTICIPATORY DESIGN

While various participatory design approaches to product development have been formalized, less work has been done in the realm of curriculum development or instructional design. Designers of learning products can draw on a number of prescriptive and theoretical models and heuristics. However, incorporating a UCD approach promotes the learner to co-designer and provides an iterative component that might otherwise be overlooked. This workshop will capture explicit and tacit knowledge of the participants regarding which techniques are best applied in deploying participatory, learner-centered design in specific domains, such as university courses or professional training.

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Reconfiguring Healthcare: Issues in Computer Supported Cooperative Work in Healthcare Environments

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Technical University of Vienna

BACKGROUND

Computers are appearing everywhere in healthcare—in doctor's offices, hospitals, x-ray facilities, at emergency room triage counters, in hospital and community pharmacies, in doctor's offices. Computers are the means through which data are organized and analyzed to support evidence based medicine; they are the means through which care providers in multiple locations can share and add to medical records. How are they being used, and what and whose goals are they serving?

In recent years, the numbers of researchers engaged in projects concerned with the design and introduction of computer systems into varied health care settings has increased. In November, we held a workshop at the CSCW conference in Chicago that sought to bring together researchers engaged in information technology projects in varied health care settings (including hospitals, community clinics, home care settings, laboratories and radiology facilities) to exchange information about projects, explore theoretical frameworks that are guiding current inquiries, and to establish opportunities to create synergies between projects. A subsequent workshop was held prior to the 2005 ECSCW conference in Paris. In this follow up workshop, we are now seeking to extend discussion of topics addressed thus far, and to provide an opportunity for participants of earlier workshops to further develop work for submission to a special issue of a journal.

In this paper we describe the formatting requirements for SIGCHI Conference Proceedings, and offer recommendations on writing for the worldwide SIGCHI readership. Please review this document even if you have submitted to SIGCHI conferences before, for some format details have changed relative to previous years. These include the formatting of table captions, the formatting of references, and a requirement to include ACM DL indexing information.

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AIMS

The goals of this workshop are to stimulate discussion about the how computerization of the health sector is interacting with cooperative work, and to encourage participants to reflect on the theme of configurability, and the ways that computer systems in health care are or are not configurable, to consider the role that participation in design can play in healthcare information systems, and to address how those systems are reconfiguring work. In this workshop we will pursue that goal through discussion of the following issues:

- Healthcare systems are complex. How are they similar to and different from other forms of complex work?
- How healthcare is organized varies from country to country and setting to setting (e.g., hospitals vs. community clinics)—it is embedded in a variety of arrangements. How do these varied arrangements influence how cooperative work is carried out?
- What theoretical frameworks are well suited to the study of information technology in healthcare?
- Is the nature of cooperative work undertaken in healthcare settings similar to or different from other forms of cooperative work?
- How do issues of standardization come to bear on information technology use in healthcare?
- How are work practices changing with the introduction of information technology in varied healthcare contexts, and how can these changes be viewed and understood?

The aim is also to use the workshop for assembling and discussing a range of research papers on these issues that will be published in a special issue of a peer-reviewed journal (currently under negotiation).

SUBMISSION REQUIREMENTS AND FORMAT

Participants are asked to submit drafts of research papers in conference submission format no later than June 6. Participants will be notified by June 12 about the status of their workshop paper.

Papers should describe a current project related to information technology and healthcare, and addresses some of the themes outlined above. Each paper will be assigned

two discussants with the task to provide an extensive review which will then be used in the workshop for an in-depth discussion.

Please prepare your paper using the ACM conference paper template.

WORKSHOP LEADERS

Ellen Balka is the principle investigator of ACTION for Health, a \$3 million project that explores the role of technology in the production, consumption and use of health information in varied health care contexts. She is a professor in the School of Communication at Simon Fraser University, and a senior research scientist at Vancouver Coastal Health Authority's Centre for Clinical Epidemiology and Evaluation. Her field work has included investigations of hospital admitting systems, automated drug dispensing machines, wireless paging systems, and electronic patient records in hospitals and doctors offices.

Ina Wagner has been conducting research about computer systems in healthcare since the early 1990s. Her previous work in this area has included studies of an early computer system developed to support nursing work, as well as a study of a digital radiology system. She is a co-investigator in the ACTION for Health Project, where in addition to carrying out work about electronic patient records, she directs the ACTION for Health work concerned with ethical issues related to computerization of the health sector.

PARTICIPANTS

This workshop is intended for researchers and practitioners interested in how computer systems in the health sector are interacting with cooperative work. In order to encourage discussion, a maximum of 15 participants will be included.

Please submit papers to actcmns1@sfu.ca.

Co-Investigating User-Experiences in Pervasive iTV Future Scenarios

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KEYWORDS

Pervasive technology, web interfaces, mobile communication, i-TV, digital and multimedia content, context awareness, immersive environments, broadcasting/narrowcasting.

ABSTRACT

This workshop will (1) explore suitable methodologies and techniques to design scenarios which are characterized by the intersections between mobile devices and iTV; and (2) analyze crucial issues related to pervasive contexts. Participants will interactively discuss and overview issues related to the design of future scenarios which are characterized by pervasive communications in contexts of entertainment, work and government. In particular, the use of handhelds and other advanced interfaces to extend the iTV experience outside the home boundaries and to enhance users' communication in diverse contexts will be discussed. The workshop will look at how innovative ethno-methodologies, collaborative design approaches and advanced evaluation techniques can lead to the creation and representation of feasible and relevant future communications scenarios. Participants will be also encouraged to debate and identify suitable applications for the above scenarios as well as related new forms of content and novel interaction models.

BACKGROUND

During the last few years the industry continuously failed to understand and forecast users' needs and expectations in sectors which are normally characterized by innovation-driven approaches (e.g. telecommunications and iTV). Many companies developed mobile devices and products/applications for iTV using ICT resources inappropriately (triggering massive modifications in users' habits and perceptive/cognitive overloads), without considering the potentials offered for instance by pervasive communications systems, tangible computing and

intelligent environments. Consequently, the market has not responded positively to investments in developing new products/applications such as mobile TV broadcasting and iTV. Moreover, rapid changes in users' habits and technological advances have generated enormous uncertainties – innovative research and development methodologies are increasingly required. Within this context, the variables that need to be taken into account have a diverse nature and cross-disciplinary approaches (including human factor studies, behavioral theories, socio-cultural & economic trends, technological developments & emerging technologies markets, interactive arts, product design, etc.) are necessary. Several techniques must be combined – collaborative, participatory and user-centered approaches that focus on users' cultural, social, behavioral and ergonomic backgrounds.

GOALS

The workshop aims at: unfolding experimental research methodologies to understand user-experience in future pervasive communication scenarios; sharing a roadmap of feasible scenarios and representative applications for pervasive iTV; analysing how digital content could evolve; investigating possible interactive models in pervasive iTV; exploring the potential of novel interfaces design within advanced and pervasive communication scenarios for entertainment, work and government; and building a multidisciplinary research community around the topic.

RELEVANCE TO PD

Innovative research and development methodologies are increasingly required to study, develop and test products/applications for iTV. In such contexts Participatory Design can play a key role. Moreover, the workshop (1) adopts a participatory approach as content is progressively co-constructed by/with participants; (2) looks at the potential offered by Participatory Design methods and tools in the development of pervasive iTV future scenarios; and (3) investigates the experiences and roles that users can play within such scenarios.

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FORMAT

In this full-day workshop organizers will actively interact with participants to stimulate discussions and outline key points. The first part of the day will be devoted to the analysis of new trends in pervasive iTV (session 1), and of novel research approaches and techniques for presenting scenarios (session 2). The second part of the day will focus on the analysis of crucial issues related to the development of advanced applications and novel content within pervasive contexts (session 3) and, if time allows, on the production of a final poster to be shared with the broader PDC community.

Due to the interactive format of some sections of the workshop, a group not bigger than 20 participants will be suitable to positively share knowledge and experiences. However, if necessary, facilitators might consider a possible reformatting to accommodate larger numbers.

PROPOSED SCHEDULE

09:00-9:15 Introduction and scene setting

- Workshop overview and objectives; Meeting participants.
- 09:15-11:00 -- Session 1
- Interactive discussion: what are the technological, cultural, political, and economic dimensions of future pervasive and interactive communication systems? What type of societies/communities could emerge? What are possible related socio-cultural trends?
- Interactive overview: what are the new challenges in pervasive communication systems? (e.g. interoperability between interfaces, tangible computing, and intelligent environments).
- 11:00-11:15 -- Break --
- 11:15-12:30 -- Session 2
- Interactive discussion: what research methods & tools (e.g. Cultural Probes¹) can be employed to create feasible/relevant pervasive iTV future scenarios? How and what can we learn from other disciplinary contexts (e.g. arts, design, fashion)?
- Interactive overview: data analysis techniques; storytelling and other related practices.
- 12:30-01:45 -- Lunch --
- 02:00-03:30 -- Session 3
- Interactive overview: taxonomy of radical applications (broadcast/narrowcast, context-aware, etc); collaborative design experiences; patterns for smart & malleable content²; and advanced interaction models (immersive environments, humanising interfaces, haptics, etc); advanced evaluation techniques for pervasive iTV applications.
- 03:30-03:45 -- Break --
- 03:45-05:00 Final considerations and conclusions

- Interactive discussion: what ethical and sociological issues should we consider?
- Overview of conclusions
- (If time allows): co-production of a position poster.

REQUIRED MATERIALS

One data Projector; one whiteboard; butcher paper; assorted stationery; printing capabilities.

ORGANIZERS' BACKGROUNDS

Organizers have a consolidated experience organizing workshops and tutorials (Mobile HCI 02/04, Mobile HCI 03, HCI International 03, HCI 03, Ozchi 03/5, IUI-DADUI 04, Percom 04, NordiChi 04, PerCom'04, AOIR 04/5, UBICOMP 04, Euro mGov 05, ISWC'05, ICCT'05) and will be responsible for facilitating the discussion during the workshop.

Dr. Daria Loi

Architect/designer and researcher in (Italy, 1994-1997); Research Assistant (project on Urban Telecentres, Australian Research Council, 1999); Researcher (development of scenarios/IT products & services, Interactive Information Institute, 1999-2001); and Research Fellow (project the potential offered by new technologies to the Printing & Publishing Industries, C2C Project, 2001-2002). She is currently Senior Research Fellow at the Globalism Institute (RMIT), working on a number of ARC projects focused on multimodality, Multiliteracies and the effect of IT on teaching and learning practices. She is also Lecturer and International Coordinator at RMIT/Industrial Design, besides acting as a consultant for a number of design organizations and institutions.

Dr. Anxo Cereijo Roibás

Senior Lecturer at the University of Brighton, he collaborates with the Nokia Research Center (Design of future UbiComp scenarios), and as a consultant for 3G services at Vodafone. He has organized workshops in international conferences and in universities (Europe, India, Canada, Malaysia, Singapore) in different areas of HCI design for UbiComp and is involved in research projects addressing the future of pervasive TV mobile phones (supported by the Vodafone Group Foundation, the British Royal Academic of Engineering and the BT IT Futures Research Centre); European Commission expert evaluator for Info Societies research projects; and member of the Executive Committee of the British-HIC Group.

¹ Gaver, W., Dunne, A., & Pacenti, E. (1999). Cultural Probes. *Interactions*, 6(1), 21–29.

² Content that is interactive, predictive, contextual and proximity sensitive, accessible everywhere and which enable a highly interactive and visual user experience. Analysis of how digital content can evolve into new forms to provide an added-value of interactivity.

Prototypes as Probes

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INTRODUCTION

Researchers in participatory design recognize the value of using prototypes to elicit qualitative user data, including the value prototypes hold in probing for conceptual, procedural, and emotional factors in user-centered research. For our work in the innovation phases of product development, we are exploring the value of employing prototypes that are highly abstracted or simplified versions of the product concepts they are testing. Rather than refining product concepts, these prototypes work as probes to reflect back to users the needs we believe we have heard them describe. This has proven valuable in our work by keeping concepts unrestrained and open to user iteration at the formative phases of concept development. This workshop will include discussion on the successes and shortcomings of prototypes as probes and the advantageous uses for their different forms. Our goal will be to share insights among those who use prototypes as research tools as well as to work to shape the beginnings of a common language with which to explain researching with prototypes.

BACKGROUND

Prototypes are increasingly used at the fuzzy front end of new product development to elicit information about the value or application of a proposed concept [3]. For those working in industry, the use of abstract prototypes as probes is a unique approach to discovery research. Specifically, rather than using prototypes to demonstrate “proof of concept,” prototypes are used as interactive tools to uncover and reflect back user needs.

As workshop organizers, we represent three distinct backgrounds: Anthropology, Computer Science, and Design. We know from personal experience that this work crosses disciplines and professional experiences, and it is a challenging task to develop a common language around prototypes as probes. But this step toward identifying common experiences will help the community to establish

robust research techniques that employ rigorous methods. As we face these growing pains we invite others into a reflective space so as researchers and practitioners we can learn from our trials and successes and build on the work of applying prototypes as probes in participatory design.

ACTIVITIES & GOALS

This workshop will work toward actionable solutions addressing the challenges facing researchers and practitioners today who are using, or considering using prototypes as probes to elicit user stories. The output of the workshop will include an outline of the issues and best practices related to prototypes as probes, as well as the beginnings of a common language with which to explain our work. In addition, the group will work to define the dimensions or segmentations of the forms of prototypes as probes. We will seek to answer the question: Are we all applying variations of the same techniques in our use of prototypes, or are there several key dimensions to understanding the application of these methods? Each participant will end the day equipped with techniques for using prototypes as probes, an overview of challenges associated with these techniques, and a “toolkit” for choosing effective forms of prototypes as probes for uncovering qualitative insight.

SCHEDULE

Part I: (2 hours) Sharing & Mapping (And Case Study)

Part II: (1 hour) Making Connections & Open Space

Part III: (2 hours) Open Space Breakout Sessions

Part IV: (1 hour) Conclusions & Next Steps

Part I: Sharing & Mapping (And Case Study) (2 hours)

Prototypes, activity kits [4], artifacts, “provotypes” (for provocation) [1] and other inquiry probes are defined and represented in many compelling ways. We will spend a brief period of time acknowledging the breadth of the space and setting some loose boundaries on what aspect of prototypes and probes we will tackle in our workshop.

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Next we will ask each participant to share his or her experience in using prototypes and target a significant concern in the area. Each participant will present a short overview of their background and their experience using prototypes as probes, along with problems they are aiming to solve. Alternatively to presenting an example, participants may also outline a framework or methodology for using prototypes as probes or explain why they do not find prototypes to be practical in their work.

After the group has shared their examples and concerns, the participants will break into small groups that will be determined based on common interest. These small groups will have a short time to discuss in more depth their common experiences. They will be asked to generate a poster summarizing the key tools, techniques, and issues shared among group members.

Part II: Making Connections & Open Space (1 hour)

The afternoon portion of the workshop will be structured in the tradition of Open Space [2]. Open Space Technology is a method for organizing, developed by Harrison Owen. The inspiration came from the fact that people tend to get more out of the coffee breaks than out of meetings themselves. Owen took on the challenge to establish a method that could produce the intense interaction of a coffee break with the output and performance in a meeting, and thus came Open Space. We will present a brief introduction to the method, and then participants will have a chance to experience this unique method in practice.

Participants will identify topics discussed in the morning session and post them on the wall. By proposing a topic, participants commit to championing the topic by facilitating the discussion and documenting the notes, conclusions, and action items to later share with the rest of the group. Participants are limited to choosing to facilitate two topics, as there will only be two time periods allotted in the afternoon.

Part III: Open Space Breakout Sessions (2 hours)

After lunch, participants will convene in small groups throughout the space to begin coffee-hour style chats on topics identified in the morning. Participants will be encouraged to dig deep into the chosen topics and push their current thinking.

Groups will take notes, and the champion of the topic will facilitate the session. Sessions will run for 45 minutes, with a 15-minute break in between. Champions will be asked to record the notes from their session during the break on a laptop we provide. At the end of the two sessions, we will have notes from all the meetings, and make the notes available to all participants after the workshop.

Part IV: Conclusions & Next Steps (1 hour)

The groups will reunite to share the strategies for improvement as discussed in small groups. Here we will tie

together the insights from the day, and summarize the problems, solutions, and dimensions of working with prototypes. Finally, we will consider ways to implement these new insights, and further develop them into working techniques of prototypes as probes.

PARTICIPANTS

The maximum number of participants for this workshop is 15. Participants will be selected based on experience and background. We are seeking a diverse group that includes academic researchers and industry practitioners, those who have conducted experimental work as well as those with applied experience, and representing a variety of academic disciplines.

Participants should prepare a short introduction. We invite participants to be as concrete as possible, in order to ground the discussion in the realities of the work. Submissions should be structured according to the following format: brief description of academic/industry background, brief articulation of the practice of using prototypes as probes, an example of using a prototype as a probe, and lessons learned or best practices based on that experience.

ORGANIZERS

Austin Henderson's 40-year career in HCI includes user interface research and architecture at Bolt Beranek and Newman, Xerox (both PARC and EuroPARC) and Apple, and strategic industrial design with Fitch. Currently, Austin is Director of Research Strategy in the Advanced Concepts & Technology group of Pitney Bowes.

Hillary Steckbauer is a Design Researcher for Yahoo!. Her previous work includes applying Design thinking to user-centered innovation at Pitney Bowes. She completed her Master of Design at Carnegie Mellon University.

Jill Lawrence is a Workplace Anthropologist for Pitney Bowes. She applies ethnographic research methods to build insights that feed innovation and business strategy.

REFERENCES

1. Mogensen, P. Towards a Prototyping Approach in Systems Development. *Scandinavian Journal of Information Systems*, Vol 4, (1992), 31-53.
2. Own, Harrison. Open Space Technology <http://openspaceworld.com>
3. Sanders, Elizabeth et al. Harnessing People's Creativity In *Focus Groups: Supporting Effective Product Development*. Langford K and McDonagh D. (Eds). (2001), 145-156.
4. Stone, Brian R. et al. User Research as the Primary Design Inspiration for Packaging and Branding Strategies. In *Proceedings IDSA 2001*. NEC (2001)

Wearing Conversations

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ABSTRACT

This interactive workshop is part of a participatory art project that deals with methods on participation and communication. The participants will be introduced to some projects that cross boundaries between art and design, between exhibition space and other rooms, between artist and audience, designer and user, producer and consumer. The participants will then make and appropriate their own contemporary wearable conversation pieces and will be encouraged to wear them during the participatory design conference 2006. The main question for the participants is to convey the project to another audience (to those who weren't there while it was happening) but avoiding preservation and representation? What happens when the narration of the art project isn't linear - when it's perishable scattered over time and space, closely connected to the participants' bodies?

Author Keywords

Participatory art projects, new media curation, presentation, preservation, storytelling, documentation, conversation pieces, locative media

ACM Classification Keywords

Miscellaneous

INTRODUCTION

Participatory art is expanding the boundaries of the traditional art and blurs borders between art and design, between exhibition space and other rooms, between artist and audience, designer and user, and producer and consumer. Participatory art has a practice of its own at the same time as most artists working with participation try to fit in to the traditional art's sphere by documenting their work and put the documentation in the white cube (the traditional exhibition space).

During a full day workshop we will discuss the issue of how to convey and communicate participatory art projects while avoiding preservation and representation.

To make the participants reflect in action [3] on these issues

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we will start the art project "Wearing Conversations". It's an interactive, participatory art project that deals with the historical conversation pieces but in a contemporary setting.

Conversation pieces were used in the mid 19th century at dinner parties among the bourgeoisie for the emerging class to have something to talk about, avoid silence and confirm social codes. The term was extended to any object that stimulates conversations. [1]

In this workshop the participants will appropriate their everyday objects into wearables that can spark conversations. Contemporary conversation pieces like accessories, clothes, key rings, gadgets, pods, mobile phone signals, pins and badges.

The project will continue during the rest of the conference, since the workshop participants are encouraged to use the conversation pieces. At the end of the conference we will, depending on what conclusions the participants draw concerning how to communicate this art project to another audience than the involved, have a set time and location where we can meet up for optional public reflection.

Starting off in a participatory process we want to mobilise and invite participants in reflecting on methods and strategies on participation that can be applied in digital as well as physical spaces. This is an idea that can be carried out almost anywhere since there are hardly any costs involved, very little previous knowledge is needed and there is hardly any pressure to perform. The workshop can offer a design audience experiences from participatory art practices as well as methods for participation.

BACKGROUND

Kristina Lindström and Åsa Ståhl have worked with several combined research and art projects at the Interactive Institute - [visklek] [5], [ljudstråk] [6], and [glasrörd] [7]- that deal with storytelling combined with digital technologies (phone connections, mp3-players, and web interactions) and other channels of communication (posters, flyers, and mouth to mouth.) The essence of the projects is based on collaboration, where the participants' actions are crucial since in this type of art there is no work of art unless there are participants in action. This interactive workshop proposal is based on a culture of participation and a culture of social activity. In this new form of culture described by Bourriaud in his text Postproduction [1], the work of art

functions as a temporary ending in a network of elements brought together, like a narrative that prolongs and reinterprets earlier narratives.

[visklek] is a game of Chinese Whispers on answering machines based on everyday stories told by young people in Växjö. We were curious to see how an open-ended, unfinished and non-anxious communication system could attract people to participate in this collaborative storytelling. The project was exhibited at Växjö Art gallery during the summer of 2004. [ljudstråk] is a library of audio walks available to the public – either by borrowing them at the Museum of Legends in Ljungby or by downloading them from a webpage. These audio walks are a result of several workshops carried out with young people to invite them to reflect on their everyday surroundings, resulting in dull, mysterious, exciting and horrifying stories. The listener is encouraged to participate in the storytelling by engaging in the public life, using SMS and the webpage. [glasrörd] is an interactive exhibition on three platforms (the museum, the public place and a webpage) in collaboration with the Swedish Glass Museum that was exhibited during the autumn of 2005. In [glasrörd] we started off, like in the other two projects, with a method that includes participation and the playful act of telling stories – in this case stories and memories connected to glass objects that have been given to them as gifts. We challenge and explore the personal value of the objects by inviting the participants to exchange objects and stories.

ISSUES OF CONCERN

We will pose questions like: What is the outcome of a participatory art project? How do we convey this to another audience (to those who weren't there while it was happening) but avoiding preservation and representation? What matter does it make if the participatory process generates material or if it doesn't? What happens when the narration of the art project isn't linear - when it's perishable scattered over time and space, closely connected to the participants' bodies? How do we make the participants invest their own time and energy into the project?

AIM AND STRUCTURE OF WORKSHOP

Introduction to different participatory art projects – our own and others'. (Approximately 45 minutes)

Participants in the workshop will be introduced to some art projects that will shed some light on our issues of concern. The projects will show different ways of working with presentation, documentation and participation, i.e. strategies for communication.

Hands-on workshop where we work with conversation pieces. (The rest of the time until lunch.) Each participant will make his/her own wearable conversation piece. They

will also be able to decide if they want to document the process of wearing the piece in any way and if and how they want to present it. As shown during other workshops that we have done previously, reflection comes in action. "Playing with Games" a workshop about creating new games made it obvious that it's when you play, the rules of the games are negotiated. That's also when the game can develop. [3] To be able to reflect on the participation in art we want to make an actual project.

Reflections on how to convey/communicate the participatory art project -blends in with previous section (The rest of the day). In relation to the introduction of other participatory art project the participants will try out different ways to communicate and convey the project.

Participatory art project. The participants will be encouraged to wear the pieces during the conference. They will also decide if they want to show anything at the museum or if the participation is enough in itself.

Reflection when the conversation pieces have been in use. At the end of the conference there will be an optional public reflection as an opportunity to share possible documentation or other thoughts. This art project is to some extent a process of making us conscious about the conversation pieces that we wear in our every day life - things that can trigger social interaction.

PARTICIPATION

We would like there to be maximum 20 participants who make wearable conversation pieces. There is an unlimited amount of people who can participate in conversations triggered by the pieces. The participants are asked to bring whatever they have that they would like to use for possible communication – audio or visual recorder, camera or other. We will provide some material to use in the creation of the conversation pieces, but the participants are welcome to bring other more personal things.

REFERENCES

1. Ammer, C. The American Heritage Dictionary of Idioms, Houghton Mifflin Company. USA. (1997)
2. Bourriaud, N. Postproduction, Lukas & Sternberg. New York. (2001)
3. Lindström, K., Ståhl, Å., Playing with Games, In Proceedings. In the Making, www.nordes.org (2005)
4. Schön, D. A. The Reflective Practitioner, How Professionals Think in Action. England: Ashgate. (1991)
5. www.visklek.se
6. www.ljudstrak.se
7. www.tii.se/studio_1221/glasrord