



**urban**  
informatics



## From Social Butterfly to Urban Citizen

**A HCSNet Workshop on Social and Mobile Technology  
to Support Civic Engagement**

Monday 13th and Tuesday 14th July 2009

Queensland University of Technology

The Glasshouse, Creative Industries Precinct, Kelvin Grove, Brisbane

Australia

[www.hcsnet.edu.au/hcsnetevents/2009/butterfly](http://www.hcsnet.edu.au/hcsnetevents/2009/butterfly)

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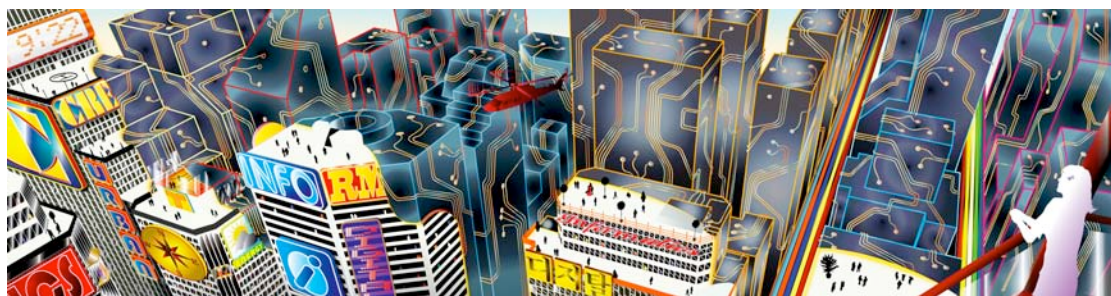
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<b>HCSNet Workshop: From Social Butterfly to Urban Citizen: Day 1</b>		<b>QUT Creative Industries, The Glasshouse, 13/14 July 2009</b>	
<b>Chairs:</b>	Marcus Foth	Queensland University of Technology	
	Martin Gibbs	University of Melbourne	
	Christine Satchell	Queensland University of Technology	
<b>09.00 - 09.30 WELCOME AND INTRODUCTION</b>			
<b>09.30 - 09.45</b>	<b>Ronald Schroeter</b>	Queensland University of Technology	Civic Discussions in Space
<b>09.50 - 10.05</b>	<b>Michael Arnold</b>	University of Melbourne	Sharing the Literature
<b>10.10 - 10.25</b>	<b>Kevin Wiesner &amp; Marcus Foth</b>	Queensland University of Technology	Restricting Mobile Narratives to Foster Community Engagement
<b>10.25 - 10.45 MORNING TEA</b>			
<b>10.45 - 11.00</b>	<b>Jeremy Yuille</b>	RMIT	Discorporeality & Projected Virtuality: Visions from the Near Future
<b>11.05 - 11.20</b>	<b>Kurt Iveson</b>	University of Sydney	Urban Computing and the Strategies of Urban Citizenship
<b>11.25 - 11.40</b>	<b>Kate Richards</b>	University of Western Sydney	Wayfarer v2.0 – Instrument for Change
<b>11.45 - 12.00</b>	<b>Sarah Barns</b>	University of Technology, Sydney	Histories of the Invisible City
<b>12.00 - 01.00 LUNCH</b>			
<b>01.00 - 02.00 WORKSHOP GROUP ACTIVITIES</b>			
<b>02.05 - 02.20</b>	<b>Jeni Paay &amp; Jesper Kjeldskov</b>	University of Technology, Sydney	Location-based Storytelling using Mobile Internet in the City
<b>02.25 - 02.40</b>	<b>Ian MacColl &amp; Kerry Raymond</b>	Queensland University of Technology	Implicit Engagement
<b>02.45 - 03.00</b>	<b>Jia Tina Du</b>	Queensland University of Technology	Cognitive Web Searching Process: An Exploratory Study
<b>03.05 - 03.20</b>	<b>Jin Shang</b>	University of Leicester, UK	Creative Cuppa: Switch ON/OFF of Digital Community
<b>03.20 - 03.40 AFTERNOON TEA</b>			
<b>03.40 - 05.00 PLENARY DISCUSSION</b>			

<b>HCSNet Workshop: From Social Butterfly to Urban Citizen: Day 2</b>		<b>QUT Creative Industries, The Glasshouse, 13/14 July 2009</b>	
<b>Chairs:</b>	Marcus Foth	Queensland University of Technology	
	Martin Gibbs	University of Melbourne	
	Christine Satchell	Queensland University of Technology	
<b>WELCOME AND INTRODUCTION</b>			
<b>09.00 - 09.30</b>			
<b>09.30 - 09.45</b>	Geraldine Fitzpatrick	University of Sussex, UK	Participatory Science in Urban Spaces
<b>09.50 - 10.05</b>	Margot Brereton, Fiona Redhead, & Miri Segalowitz	Queensland University of Technology	From Participatory Design to Designing Participation: Constructing Civic Engagement as a Matter for Design
<b>10.10 - 10.25</b>	Jaz Choi	Queensland University of Technology	Eat, Cook, Grow: Ubiquitous Technology for Sustainable Food Culture in the City
<b>MORNING TEA</b>			
<b>10.45 - 11.00</b>	Jodie Luu	National University of Singapore	Websites or Facebook Groups – What Choice for Nonprofit Organizations in Singapore?
<b>11.05 - 11.20</b>	Bjorn Nansen, Jon Pearce, & Wally Smith	University of Melbourne	Social Media for Garden Watering
<b>11.25 - 11.40</b>	Christine Satchell	Queensland University of Technology	From Social Butterfly to Urban Citizen
<b>11.45 - 12.00</b>	Renato Iannella & Sarath Indrakanti	National ICT Australia (NICTA)	Partial Social Profiles: How to be a Social Butterfly and Urban Citizen at the Same Time
<b>LUNCH</b>			
<b>PLENARY DISCUSSION</b>			
<b>01.00 - 02.00</b>			
<b>02.05 - 02.20</b>	Aneesha Bakharria, Peter Bruza, & Laurianne Sitbon	Queensland University of Technology	Shades of Opinion: Using Thematic Analysis to Encourage Social Participation
<b>02.25 - 02.40</b>	Jim Phillips & Max Jory	Monash University	Technology Adoption in Education: Videoconferencing and Audience Participation
<b>02.45 - 03.00</b>	Ian MacColl & Peta Wyeth	Queensland University of Technology	Tinkering for Environmental Education
<b>03.05 - 03.20</b>	Laurianne Sitbon	National ICT Australia (NICTA)	Recommending Urban Citizens to Social Butterflies
<b>AFTERNOON TEA</b>			
<b>03.20 - 03.40</b>			
<b>KEYNOTE: ADAM GREENFIELD, NOKIA. LaBoite Theatre, QUT</b>			
<b>03.45 - 05.00</b>			

## 13 July 2009 – Day 1

### 09.00 - 09.30 WELCOME AND INTRODUCTION

#### 09.30 - 09.45

##### **Civic Discussions in Space**

*Ronald Schroeter (r.schroeter@qut.edu.au), Queensland University of Technology*

Discussions in Space is a project offering an additional, experimental channel to engage with Brisbane residents as part of the Brisbane City Council's (BCC) Smart City Master Plan consultation phase. The project facilitates a public civic discussion and opinion forum through the installation of a large public screen, which passers-by can interact with using their mobile phone's SMS, Bluetooth, camera and Internet capabilities.

The installation promotes civic topics, issues or questions and invites the general public to submit their opinion to the publicly visible screen, hence providing a platform for collective expression and public discourse amongst Brisbane residents. Editing and censoring capabilities ensure that the content reflects the norms and values of the installation providers, QUT and BCC.

The project provides and investigates forms of in-place digital augmentation, which refer to the ability to enhance the experiences of citizens in physical spaces through digital technologies that are directly accessible within that space. This can take place in many forms and ways, predominantly through location-aware applications running on the individuals' portable devices, such as mobile phones, or through large static devices, such as public displays, which are located within the augmented space and accessible by everyone.

The hypothesis of this research project is that in-place digital augmentation, in the context of civic participation, where citizens collaboratively aim at making their community or city a better place, offers significant new benefits compared to conventional online forums or wikis – as used today. The reasoning behind this assumption is that it allows a wide range of urban dwellers to access services and information and to engage with each other, where and when it is mostly needed, in place. Currently, such in-place access or engagement is either not available at all or too cumbersome to reach.

From the council's perspective, the proposed system could be particularly effective to engage with "backyard buddies" (the not so interested and involved, transient, younger residents) and "loyal locals" (the time poor professionals with some emotional connection to the city) who are generally demographics that are more difficult for councils to engage with.

#### 09.50 - 10.05

##### **Sharing the Literature**

*Michael Arnold (mvarnold@unimelb.edu.au), University of Melbourne*

The sheer quantity of literature available to the contemporary scholar is potentially overwhelming, and the claim that this poses a significant problem needs little elaboration. Web 2.0 social networking applications are available that might address these problems, at least in part.

Recommender Systems are widely employed to assist people to discriminate when faced with potentially overwhelming choice, and though most work in the area occurs in the context of retail purchasing, there is reason to believe that in the scholarly context some Web 2.0 applications can either reduce the burden of choice-making, or increase the likelihood of successful choice-making, or both. A number of recommender systems and recommender algorithms are available in the public domain, and employ either 'content based', 'peer-group based', or 'hybrid' strategies. Each of these resources and strategies is potentially useful, but there are more than enough problems to sustain serious and useful research prior to implementation.

The problems and potentials associated with recommender systems are explored in the paper and subsequent workshop discussion.

A second and related problem involves systems for the storage of literature, which are typically structured as arboreal, or alternatively, as flat files. Neither structure is optimal for the purposes of sharing.

It is suggested that a useful alternative is a system that would bring together and repurpose exiting open source applications and algorithms to...

1. Enable self-selected communities of scholars to deposit their own reading lists in a communal repository of references.
2. Arrange each reference inductively according to the relations between that reference and the attributes of all other references in the system.
3. Represent each reference at top-level in the form of a point of light – its colour, position and size within the repository being determined by its relative affinity with all other references in the system.
4. Enable communities of scholars to see their own references in the context of their colleague's references. Relevance is evident, quality is implicit, purposeful browsing and serendipitous discovery are each facilitated.

The system and its advantages and weaknesses are also to be described in the paper and discussed in the workshop.

## 10.10 - 10.25

### **Restricting Mobile Narratives to Foster Community Engagement**

*Kevin Wiesner (k.wiesner@qut.edu.au) & Marcus Foth (m.foth@qut.edu.au), Queensland University of Technology*

In recent years, the usage of the mobile Internet increased tremendously, due to the emergence of sophisticated and user-friendly mobile devices in combination with the provision of affordable data-plans. This development allows users to access almost any information at any time and from anywhere, leaving the decision if and when to engage to the user. However, Web 2.0 services often heavily rely on the participation and engagement of their users, as they are mainly based on user-generated content. The advent of mobile Web 2.0 services now brings up the need to motivate and activate people while they are on the go.

In this on-going study, we question the anytime, anywhere paradigm in this context, as we think that it does not contribute to the motivation of users to engage. We explore whether constraints and restrictions may positively influence the enticement of mobile users. For instance, being able to access information only at a certain location or time, might be more exciting, than being able to access it all the time. Further, restricting the chance to contribute content to a specific place, forces the users to engage at the spot, and does not leave any room for procrastinating.

In a first step, we created a Mobile Narrative that was inspired by the concept of The 21 Steps by Charles Cumming . The access to the chapters is restricted, and it only unfolds them, if the reader is in-situ. This concept allows creative writers of the story to exploit the fact that the reader's location is known, by intensifying the user experience and integrating the reader's environment and the context into the narrative.

We tested this Mobile Narratives in two different settings: at Kelvin Grove Urban Village (KGUV), a master-planned city fringe community in Brisbane, Australia, and at the Cooroy Lower Mill Site, formerly the area of Queensland's largest hardwood mill, which is now redesigned into a landmark civic precinct with historical, cultural, and educational facilities. We explored the user acceptance and the newly gained advantages through this way of reading. We will present our findings from these two studies, and will outline our further work and further ideas for to foster community engagement by using restrictions.

## 10.25 - 10.45 MORNING TEA

### 10.45 - 11.00

#### **Discorporeality & Projected Virtuality: Visions from the Near Future**

*Jeremy Yuille (overlobe@gmail.com), RMIT*

“Manfred can feel one of his attacks coming on. The usual symptoms are all present – the universe, with its vast preponderance of unthinking matter, becomes an affront; weird ideas flicker like heat lightning far away across the vast plateaus of his imagination – but, with his metacortex running in sandboxed insecure mode, he feels blunt. And slow. Even obsolete. The latter is about as welcome a sensation as heroin withdrawal: He can't spin off threads to explore his designs for feasibility and report back to him. It's like someone has stripped fifty points off his IQ; his brain feels like a surgical scalpel that's been used to cut down trees. A decaying mind is a terrible thing to be trapped inside. Manfred wants out, and he wants out bad – but he's too afraid to let on.” Charles Stross. *Accelerando*. Orbit Books, London, August 2005

Manfred's lost his glasses, and it's not a pretty sight... As our computing machines disappear into the fabric of everyday life, I'd like to explore some approaches to imagining what kind of future this might create, particularly with respect to personal engagement.

Designers are well versed in the use of scenarios and personas for the generative envisioning of technically induced impact and repercussions. Fiction, and Science (or Speculative, as it was called during the 70's) Fiction in particular, is also well versed in this technique. It is from here that I wish to take my cues, specifically in two differing depictions of near-current society, from authors Charles Stross' *Accelerando* and William Gibson's *Spook Country*.

Both authors embrace the science of their worlds, and engage with the geek, anarcho, and zeitgeist cultures enabled in the interstitial spaces of technology and society. But these are two very differing approaches to how technologies will disappear; Stross follows the discorporeality of nanotech assemblers and replicators, Gibson embraces the virtuality of projection and superimposition firmly tied to location in the here (if not the now).

In contrasting these authors vision of the world with more technical 'stuff' embedded in its fabric, we can discuss popular underlying fears and anxieties about said technologies. Exploring and understanding these emotional responses to technology can help us to better design products and services that disappear into the fabric of our society.

### 11.05 - 11.20

#### **Urban Computing and the Strategies of Urban Citizenship**

*Kurt Iveson (k.iveson@geosci.usyd.edu.au), University of Sydney*

This paper will offer a framework for thinking about the ways urban computing technologies are being mobilised in on-going struggles over the practices and possibilities of urban citizenship. It will then apply this framework in an analysis of the uses of urban computing by combatants in the contemporary 'war on graffiti.'

The first part of the presentation will provide a critical overview of approaches to urban citizenship in contemporary cities, in order to assess their usefulness for thinking about the politics of urban computing. Here, I will situate emerging technologies of urban computing within a wider analysis of the techniques and technologies which are deployed in struggles over the rules and norms of belonging to the city as a political community. The focus here will be on substantive as well as juridical dimensions of urban citizenship.

I will argue that the possibilities of urban computing for urban citizenship are the product of on-going experiments in the service of three competing citizenship strategies:

- responsabilisation – the provision of incentives and information to enable urban inhabitants to take part in city life as responsible consumer-citizens;

- discipline – the identification and containment of ‘anti-social’ urban inhabitants who are either unable or unwilling to be part of the city;
- politicisation – attempts to assert new ‘rights to the city’ by re-writing the rules and norms of belonging, in order to include people/practices that have no proper place in the city.

The development and application of new urban computing technologies is not bound exclusively to any one of these strategies – indeed, there are plenty of examples of particular technologies and applications being mobilised in the service of these different strategies simultaneously, and of learning across these domains of action.

In the second part of the paper, these initial observations about urban citizenship and urban computing will be further developed through an analysis of on-going conflicts over the place of graffiti in Australian cities. Graffiti provides a particularly useful example, as it allows us to see the ways in which new technologies are mobilised in different ways by different actors attempting to gain tactical advantages in existing conflicts. I will show how the creation, mapping and visualisation of digital archives of graffiti by both urban authorities and graffiti writers has can be usefully analysed with reference to the dynamic between responsabilisation, discipline and politicisation.

The paper will conclude with a brief presentation of my proposal to use some basic urban computing applications in a project designed to re-politicise the place of graffiti in Sydney.

### 11.25 - 11.40

#### **Wayfarer v2.0 – Instrument for Change**

*Kate Richards (kate.richards@bigpond.com), University of Western Sydney*

‘Wayfarer v 2.0 – Instrument for Change’ is a digital media project currently in development for exhibition/performance at ISEA Belfast 2009 and Melbourne Arts Centre 2009. I am interested in presenting it at the workshop and to meet with other interested in the social impact of mobile and ubiquitous computing, and empowering people for social change, through mobile media.

Project description: What would happen if game avatars hit the street and decided to improve the ethical, environmental and social fabric of our city: find out with ‘Wayfarer– Instrument for Change’.

‘Wayfarer – Instrument for Change’ is a web-based, multiplayer game that breaks out of the box and migrates to the real world. Teams of ‘wayfarers’ undertake a series of live, socially responsible interventions in a city or regional area. The wayfarers use mobile phones to video their events and stream them live to the wayfarer website. The public and selected experts comment during the game using the website and other social media.

### 11.45 - 12.00

#### **Histories of the Invisible City**

*Sarah Barns (barns.sarah@gmail.com), University of Technology, Sydney*

My current doctoral research explores historical conceptions of ‘the city’ and its framing as a political tool for the anticipatory consciousness. This research tracks historical relationships between utopianism and the city, and deciphers the ways in which ‘the city’ is used to frame questions of political participation and citizen engagement. This research seeks to situate the current interest in use of mobile technologies toward promoting citizen engagement within a broader historical context that has explored the framing of spatial experience as a precursor to political engagement.

While these are theoretical pursuits, at a practical level this research has also involved locating specific ambient film and sound archives of the street, to locate historical spaces of citizen engagement as a kind of archaeology of the invisible, wireless city. The research has to date been based in Sydney and has resulted in the ABC’s first foray into location-based services called ‘Sydney Sidetracks’ (<http://www.abc.net.au/sidetracks>), which provides a platform for the

exploration of location-based archives about Sydney's changing topography via map and mobile phone interfaces. The practice continues through the development of new partnerships for the delivery of ambient archives using the tools of surface computing and urban informatics. A particular focus is on the practice-based research potentials associated with a user experience that engages an auditory past to frame the visual present using mobile, context aware devices.

My specific interest in attending is to contribute these methodologies and approaches to understanding the 'invisible city' in the development of new services that might reimagine urban spaces towards more responsible, sustainable forms of interaction between people and planet.

Further information about this project can be viewed at the following links:

<http://sitesandsounds.net.au>

<http://www.powerhousemuseum.com/dmsblog/index.php/2008/11/11/abc-innovations-sidetracks-a-mobile-heritage-pilot-featuring-some-powerhouse-content/>

<http://www.abc.net.au/sidetracks>

## 12.00 - 01.00 LUNCH

## 01.00 - 02.00 WORKSHOP GROUP ACTIVITIES

### 02.05 - 02.20

#### **Location-based Storytelling using Mobile Internet in the City**

*Jeni Paay (jeni@cs.aau.dk) & Jesper Kjeldskov (jesper@cs.aau.dk), University of Technology, Sydney*

The mobile Internet is not just about doing, while moving, things we used to do at our desktop, such as accessing our email – it is about enabling people to do things that couldn't be done before, and providing the opportunity to establish a relationship between digital media and the environment in which it is being used. So, imagine if the Mobile Internet could allow the city to tell its story. Let us move away from the generally accepted idea of a mobile city guide as presenting users with facts about their surroundings, to a more engaging experience, which responds to the users current location and adds value to being mobile by turning city streets into the stage in which a story unfolds. By taking an orthogonal approach to mobile guides, we would like to provide a non-goal directed user experience that weaves fictional stories around existing historical, architectural and environmental elements of the users immediate surrounds as they move through the built environment.

Extending our previous work on designing a mobile social guide for Federation Square in Melbourne, we have been investigating the idea of location-based storytelling. This has been done through the development of three explorative "fiction in the city" proof-of-concept prototype systems developed for Aalborg, Denmark, at Aalborg University in late 2007: COMPAS, Bjoernetjaeneste (Bear Favour), and Computer Life. Based on this work, we have generated a series of concept ideas for location-based storytelling, interaction design ideas for interactive narratives related to the user's location, and qualitative findings from a series of user experience studies in the city of Aalborg.

### 02.25 - 02.40

#### **Implicit Engagement**

*Ian MacColl (imaccoll@gmail.com) & Kerry Raymond (k.raymond@qut.edu.au), Queensland University of Technology*

In this presentation we distinguish between implicit and explicit participation afforded by "Web 2.0", arguing that the implicit enables civic engagement based on what people do, rather than what they say.

Web-based social media, such as blogs, wikis, video- and photo-sharing, and social networking, are typical examples of Web 2.0, providing a more participatory Internet experience which, in turn, has the potential to support increased civic engagement. One factor in the success of web-based social media has been the explosive growth in Internet access and usage during the 1990s. More recently, mobile Internet access and usage is ramping up similarly.

Financial institutions have been slow to embrace social media due to concerns about brand, reputation, security and so on. Wells Fargo is a notable exception, using blogs, video-sharing, social networks and an immersive virtual world, all managed by a social media team. Other examples of "Banking 2.0" include social lending and "communities of transaction", third-party account-aggregation and social-networking services, such as Wesabe and Geezo.

These approaches to social media are based on explicit participation and engagement at a personal level. Users collaborate, contribute and commune as networked individuals, creating interwoven peer-to-peer relationships where the peers may or may not be known to each other. However, explicit interactions also have an implicit aspect which provides an additional opportunity for civic engagement.

Implicit participation occurs when data from and about users is aggregated, typically anonymously, and is used to provide innovative services to the users and others. Recommender systems, such as Amazon's product recommendations, are a classic example. Products are recommended to Amazon customers based on similarities to other customers inferred from purchasing and browsing histories.

Implicit interaction can also be used for making decisions on the basis of clear empirical evidence. Google, for example, uses A/B experiments to test the effect of different versions of a web page, for example, for advertising placement and, notoriously, for evidence-based page design, rather than so-called intuition-driven design. Evidence-based decision-making is also a hallmark of the Australian Government's agenda for public policy.

The advantage of empirical evidence is that it describes what people do, rather than what they say. It may also be used overtly, e.g., Amazon, or covertly, e.g., Google. Financial institutions store massive quantities of financial transaction data that can be used as a starting point for evidence-based decisions. Inferences based on raw transactions are somewhat risky, however, as the data consists of a date, an amount and an opaque description or narrative, such as

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Our research involves enabling users to manually and automatically categorise raw transactions to provide semantically meaningful data that can be mined for social trends, such as how people spend their stimulus payment. Categorised transactions are useful to customers, individually and collectively, and the aggregated transactions can be used as a meaningful basis for civic decisions, based on what people do, rather than what they say.

## 02.45 - 03.00

### **Cognitive Web Searching Process: An Exploratory Study**

*Jia Tina Du (jia.du@student.qut.edu.au), Queensland University of Technology*

As Web searching becomes more prolific for information access worldwide, we need to better understand humans' Web searching behaviour and develop better models of users' interaction with Web search engines. Web search models are a significant and important area of Web research. Web searching is an important element of information behaviour and human computer interaction which includes multitasking processes and the allocation of cognitive resources among several tasks, and shifts in cognitive, problem and knowledge states. In addition to multitasking, cognitive coordination and cognitive shifts are also important but under-explored aspects of Web searching. Much research has been conducted into Web search. However, few studies have modeling the nature of and relationship between multitasking, cognitive coordination and cognitive shifts in the Web search context. Modeling how Web users interact with Web search engines is important for the development of more effective Web based IR

systems. This study aims to model the relationship between multitasking, cognitive coordination and cognitive shifts during Web search. Data collection techniques included pre- and post-search questionnaires, think-aloud protocols, Web search logs, observation, and post-search interviews. A pilot study with two study participants was conducted. Key findings include:

1. information problems ordering was affected by the following factors: personal interest, problem importance, usefulness in future, and randomness. Personal interest was found as the major factor for both study participants' information problems ordering;
2. study participants switched between multiple information tasks, including searching on an original information problem and on an evolving information problem, and serendipity browsing on other topics;
3. both participants experienced complex cognitive coordination process embedded within Web search interaction. Two participants experienced different degrees of complicated cognitive coordination process;
4. both study participants experienced positive and negative cognitive shifts at all levels including information problem understanding, information problem stage and seeking stage, personal knowledge, and contribution to the problem resolution;
5. an important relationship existed between multitasking, cognitive coordination, and cognitive shifts during Web search interaction. Web search interaction is shown to be a multitasking process during which information problems ordering, task switching, task and mental coordinating occur, and at deeper level, cognitive shifts take place. Cognitive coordination is the hinge linking multitasking and cognitive shifts to move user's through their Web searching interaction process. An initial model based on the key findings is provided to illustrate this relationship. Implications of the findings and further research are also discussed.

### 03.05 - 03.20

#### **Creative Cuppa: Switch ON/OFF of Digital Community**

*Jin Shang (jks21@le.ac.uk), University of Leicester, UK*

Creative Cuppa Seminar Series (CCSS) is a long-term student/stuff research seminar series physically in association with the Department of Media and Communication (DMC), at the University of Leicester (UoL). The project aims to bring together researchers and other interested people from different disciplines or knowledge backgrounds, both inside and outside the University, to generate, discuss, and criticize issues related to their experience or understanding of making use of new media technologies. Through the activities, participants are expected to better understand the modern world from a socio-technical perspective; and this is we believe important and closely relevant to their research and personal development in the future.

Creative Cuppa holds regular meet-ups every month. A different theme is chosen for each meet-up, but always focused on the discussion of themes within new media and communication technologies. A newsletter is usually produced after each meet-up and sent to those who have subscribed to the service. Creative Cuppa has also created its online community on Facebook. This is designed to keep the participants connected and updated at all times. In that sense, Creative Cuppa is more like an ongoing process that cross over the boundaries of time and space. Creative Cuppa has been awarded a £2000 grant by RTIF (Roberts Fund) through the University of Leicester Graduate Office.

As one of the co-founders of 'Creative Cuppa', I'm now involved in the project as the project manager and operating director. Basically for the presentation, I would like to give a brief introduction about the project; and from my own initial experience, I would also like to generate a follow-up discussion with other participants, in terms of the question how the latest web 2.0 technologies (i.e. Facebook, Twitter, Flickr, Xphone, etc.) can be well used and organically incorporated with the real world social activities (i.e. group meetings and social connections of membership, etc.), in order to achieve specific goals for framing and organizing an effective and inclusive 'digital community'.

For more details about the project 'Creative Cuppa', please visit our websites at <http://creativecuppa.com> or join us on the Facebook group at <http://www.facebook.com/group.php?gid=60675201456>

### 03.20 - 03.40 AFTERNOON TEA

### 03.40 - 05.00 PLENARY DISCUSSION

### 06.00 - 10.00 DINNER

#### **Sling Tapas Restaurant and Cocktail Lounge**

153 Boundary Street, West End QLD 4101

phone 07 3255 3522

[www.slinglounge.com](http://www.slinglounge.com)

*Bus transport provided to Sling, departing Kelvin Grove at 5.30pm.*

## 14 July 2009 – Day 2

### 09.00 - 09.30 WELCOME AND INTRODUCTION

#### 09.30 - 09.45

#### **Participatory Science in Urban Spaces**

*Geraldine Fitzpatrick (g.a.fitzpatrick@sussex.ac.uk), University of Sussex, UK*

Project team: Hilary Smith, Judith Good, (University of Sussex), Josh Underwood, Kevin Walker, Rose Luckin, (London Knowledge Lab, IOE), Duncan Rowland, Steve Benford (University of Nottingham)

The fusion of e-Science and Web 2.0 is empowering everyday scientists to participate globally and pervasively in new kinds of research and collaboration through academic networking, easy and open publishing and sharing of results, data, workflows, tools and methods (see De Roure, 2007). New technologies are also enabling a more participatory Science (p-Science) and (Underwood et al, 2009). What are the possibilities for using technology to increase participation in science beyond the lab into the community and in particular to bridge the gap between school science and science in the real world?

Through a number of educational e-Science projects and related activities, we have been engaging students, families and the public in the collection, sharing and analysis of scientific data using handheld devices and web 2.0 tools (e.g., as illustrated in Figure 1), and in a variety of settings from the classroom, to public science events, to outdoors. In particular we have been focussing on local environmental issues such as air pollution monitoring (Stanton-Fraser et al, 2005), an outdoor treasure hunt for sustainable energy examples (Wyeth et al, 2008), and wind energy generation (Smith et al, 2009).

We have also explored the design of participatory science activities with teachers at 2 workshops where we demonstrated the use of Google Docs, Blogger, Flickr, You Tube and Skype to support a participatory Science activity around designing and evaluating wind turbines (see figure 1; see also the DIY Energy blog contributed to by participants at <http://windenergyxpt1.blogspot.com/>).

In this workshop, I would be interested in exploring other's experiences of taking such technologies further out into the urban spaces. We can also share experiences gained in making use of mobile devices and web 2.0 tools to try to promote participatory science. Questions of interest are around: the notion of widening participation to engage the general public in science

activities and in particular helping to understand, monitor and promote sustainable energy practices in our communities how to make stronger links between the home, school, scientists and industry around a participatory science agenda how to exploit the increasing sophistication of our everyday tools to support participation

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## 09.50 - 10.05

### **From Participatory Design to Designing Participation: Constructing Civic Engagement as a Matter for Design**

*Margot Brereton (m.brereton@qut.edu.au), Fiona Redhead (fiona@dotsec.com), & Miri Segalowitz (miri.segalowitz@yahoo.com), Queensland University of Technology*

For classes of problems and opportunities that manifest themselves at the level of community, one of the major challenges is to design and grow participation by the community itself. Growing participation is a key challenge for the viability of green initiatives, local community initiatives and virtual community initiatives. This position paper argues that civic engagement could be addressed through design and that the key problem is the design of participation itself.

While participatory design, and user-centred perspectives could be brought to bear, these methods were born of a different era and it is not clear how best to formulate them with the advent of social and mobile technologies. Formats of participation have changed. New formats of participation (Brereton and Buur, 2008) can be characterized by

- their sensitivity towards new types of network relations among people,
- the diverse motivations of people to participate,
- the subtle balance of values and benefits involved in collaborative endeavours and
- the inherent power relations between participants.

Problems of designing participation have distinct characteristics. First, and by definition, the aim is to grow participation by a sufficient number of people in a scheme, because society will benefit as a whole the more that people participate. Second a common problem to be addressed is Hardin's Tragedy of the commons, the paradox of increased personal benefit (for example individual car use) resulting in decreased social well-being (congestion, environmental damage). This problem results in the third characteristic, the "chasm of critical mass" that is often difficult to cross.

This paper will examine methods that might be brought to bear in the solution of these problems, given our understanding of formats of participation in this era.

## 10.10 - 10.25

### **Eat, Cook, Grow: Ubiquitous Technology for Sustainable Food Culture in the City**

*Jaz Choi (h.choi@qut.edu.au), Queensland University of Technology*

Healthy and sustainable food is gaining more attention from consumers and industry. Yet many approaches to date are limited to information dissemination, advertisement or education. This research grant collaboration with Intel, Queensland Health and local partners will explore urban food practices – growing, cooking, eating – to support the well-being of people and the environment. User centred design research will inform the development of entertaining, real-time, mobile and networked applications, engaging playful feedback to build motivation. The study will deliver usable and useful prototypes employing individual and group strategies to foster a food culture that employs new ways to produce, share and enjoy food that is green, healthy and fun.

Raising people's awareness of healthy and ecological food options with nutritional data and educational information does not foster a sustained practice towards a more environmentally friendly food culture. This study seeks to develop a better understanding how to go beyond just informing and into supporting and sustaining action and change. Drawing on interaction design, ubiquitous computing and real-time information, the study will deliver research findings that inform viable new design approaches and information interfaces which will strengthen Australia's position to resolve the problems of obesity, malnutrition and ecological issues of mass food processing, and contribute to the sustainability of life in Australian cities.

## 10.25 - 10.45 MORNING TEA

### 10.45 - 11.00

#### **Websites or Facebook Groups – What Choice for Nonprofit Organizations in Singapore?**

*Jodie Luu (jodie.luu@nus.edu.sg), National University of Singapore*

In Singapore society where nonprofit organizations play a crucial role in providing welfare services to the people in need, it is important to understand how new media such as website and social network sites have been helping them engage and build relationship with the public. Some nonprofits are stepping up their online communication strategies by creating Facebook groups to connect better with an increasingly Internet savvy population; yet some still remain satisfied with what their websites have delivered so far. A content analysis of eight websites and four Facebook profiles of nonprofits in Singapore, together with in-depth interviews with representatives from three organizations in the samples showed that there is a significant difference between nonprofits using only websites and those using both platforms in terms of disclosure and deliberative public sphere, with stronger use observed in the latter group. However, a Facebook group was found not to be a determining factor because looking at the websites of the two groups, the latter also showed a stronger use of elements supporting disclosure strategy on their websites. A Facebook group, thus, could be viewed as an extension of a nonprofit's website, serving as a gateway to the website where more relationship building and public discourse engagement elements are available. The findings also seem to suggest that it is the nonprofits' decision about how much online presence they would have.

### 11.05 - 11.20

#### **Social Media for Garden Watering**

*Bjorn Nansen (nansenb@unimelb.edu.au), Jon Pearce (jonmp@unimelb.edu.au), & Wally Smith (wsmith@unimelb.edu.au), University of Melbourne*

We plan to describe an application currently being developed to utilise social media for civic engagement around domestic garden water use. This collaborative project involving HCI designers and horticultural scientists from the University of Melbourne, intervenes in practices of water consumption and sustainability, which are emerging as critical dimensions to responsible citizenship in the 21st century. The first version of the Smart Garden Watering

(SGW) software was launched in 2008, allowing gardeners to build simulations for water irrigation demand and scheduling based on a mathematical model derived from horticultural data. The next iteration of this interface seeks to embed this 'tool' within a site incorporating Web 2.0 capabilities, in order to support online and participatory communities using water in gardens.

We will report on the social research evaluating version 1 and development of the social media version 2, in terms of its potential and relevance for connecting with existing offline configurations of watering practices. In particular we will reflect on its potential for realising what is described as 'intermediate-level collective processes' of sustainability (Sofoulis, 2005, 447), based upon sociotechnical perspectives informed by critical theories of technology. This approach seeks to escape solutions to water resource sustainability located with the individual and demand-side management (behavioural solutions) or with the aggregated whole-of-population and supply-side management (engineering solutions). Instead, it recognises that individual action is informed (and constrained) by the material and technical dimensions of social life. As such, we will assess the problems/limitations in designing social media for existing intermediate and distributed routines of everyday watering shaped around interaction with taps, hoses, buckets and so on. That is, of successfully integrating social media with existing situated practices of water and citizenship. Especially difficult is how such an application can complement more informal or vernacular methods of garden watering – what Shove et al. refer to as 'routine creativity' (2007).

We suggest that social technologies, when re-appropriated for civic engagement around water sustainability, can only ever be conceived as a partial solution to a distributed and ongoing dynamic. In this instance, the relationships between individual water users, expert knowledge, water service providers and watering technologies involves a complex of nature (rainfall, plants); technology (watering devices); and culture (routines of and attitudes to watering). Whilst contributing value to the project of water sustainability, such technologies must be conceived as interdependent: designed to integrate within, rather than work-over, a much broader arrangement of 'distributed competencies' (Shove et al., 2007, 54).

## 11.25 - 11.40

### **From Social Butterfly to Urban Citizen**

*Christine Satchell (christine.satchell@qut.edu.au), Queensland University of Technology*

Early 21st century societies are evolving into a hybrid of real and synthetic worlds where everyday activities are mediated by technology. The result is a new generation of users extending their everyday experiences into these emerging digital ecologies. However, what happens when users re-create their human identity in these spaces? How do the tools of new technologies such as the mobile phone allow them to capture and share their experiences? In order to address these issues this chapter presents the findings from a three-year study into mobile phone use in urban culture. The study revealed that for a new generation the mobile was integral in the formation of fluid social interactions and had accelerated urban mobility. Users once restrained by pre-made plans were able to spontaneously traverse the city and suburbs, swarming between friendship groups and activities. Distinct user archetypes were emerging from these mobile phone driven sub-cultures whose practices were bringing about fundamental changes in social mores with respect to engagement and commitment, to notions of fluid time versus fixed time and ultimately to urban mobility. Connectivity had become central to what it means to have a social identity and users were responding to this by merging bits of data to create their 'ideal digital self' through which they communicate socially. Yet, recent developments in mobile phone design reveal the potential for a new generation of people to recontextualize their use in a way that moves beyond 'the social', as they utilise sensors and data capturing and sharing functionalities in new mobile devices to augment their 'social butterfly' identity with an ideology of a 'socially conscious urban citizen'.

## 11.45 - 12.00

### **Partial Social Profiles: How to be a Social Butterfly and Urban Citizen at the Same Time**

*Renato Iannella (renato@nicta.com.au) & Sarath Indrakanti (sarath.indrakanti@nicta.com.au), National ICT Australia (NICTA)*

Social Networks have been a world-wide phenomenon and their proliferation poses a serious interoperability and usability challenge to both end users and service providers. Recently governments have seen this new opportunity to gather input from public citizens on their activities or to promote their services via this new Web 2.0 vehicle.

Many Web users have many different social networks accounts and utilise them in different ways depending on the context. For example, more friendly chat on FaceBook, more professional on LinkedIn, and a bit daring interaction on Hi5. Maintaining these online profiles is cumbersome and time consuming. A new social network will find it harder to attract new members simply because of the effort involved in maintaining yet-another-profile.

What is needed is the ability for a user to control their own profile and, more importantly, what aspects of the profile they will expose to different social networks. This gives the user the idea of centralised control, even though the data could be distributed, by empowering them to decide how they can be viewed and contextualised by different services. So to be a Social Butterfly on Hi5 they can expose characteristics relevant to that site (for example, my favourite drink), and to be a good Urban Citizen they can expose relevant attributes (for example, my home address) and many other contextual roles in between.

Participation is key to social networks and critical if such a network is to be successful in the government sphere of engaging with the public. And the ability to slice-up your profile depending on the context of the social network will be the driving factor that expands participation beyond the big players like FaceBook and MySpace. Also a user should be able to store their profile or parts of their profile at a location of their choice. For example, a user might want to store their personal information such as home address and telephone number on FaceBook and their work-related information such as office address and office telephone number on LinkedIn, or may even want to store their entire profile locally on their PC. This is not possible today. Open standards for interoperable social profiles are the enabling technology. They allow more social networks to give users more control of their profiles.

Currently social network aggregators such as Friendfeed and Cliqset aggregate user information into one place but do not give the user a choice of where to store their profiles. Neither do they explicitly inform the user if their aggregated profile is being stored at their servers. A user may trust a certain network with holding only their social information but not their professional information. Also distributing parts of a user's profile to multiple locations and/or allowing the user to store their profile locally on their PC enables the removal of data silos. This also enhances user privacy and in turn much greater participation in new social networks intended for a specific purpose such as allowing Urban Citizens to raise their voice towards a certain cause.

## **12.00 - 01.00 LUNCH**

## **01.00 - 02.00 PLENARY DISCUSSION**

### **02.05 - 02.20**

#### **Shades of Opinion: Using Thematic Analysis to Encourage Social Participation**

*Aneesha Bakharia (aneesha.bakharia@gmail.com), Peter Bruza (p.bruza@qut.edu.au), & Laurianne Sitbon (laurianne.sitbon@nicta.com.au), Queensland University of Technology*

A growing percentage of citizens on a regular basis provide feedback and express opinions within blogs, microblogs (eg. Twitter) and discussion forums. As a plethora of data is contributed across multiple social platforms, it becomes increasingly important to encourage social interaction, by providing time poor citizens with a high level overview of the topics and opinions being expressed. We utilise an unsupervised clustering technique know as Non-negative Matrix Factorization to theme various forms of social interaction.

Non-negative Matrix Factorisation is a relatively new algorithm [1] that has successfully been applied generally within the document clustering domain [2]. Non-negative Matrix Factorisation allows textual responses to belong to multiple themes. This is ideal in situations where a textual response may be related to multiple topics or express multiple opinions. Textual responses can also be very short in length and have a very high vocabulary mismatch. Non-negative Matrix Factorisation is able to successfully extract latent semantics from text and is able to satisfactorily cope with mismatched vocabulary.

We have designed an intuitive interface that allows blog comments, tweets (microblog status messages) and forum posts to be interactively themed. Our interface is designed to hide the mathematical complexity of Non-negative Matrix Factorisation. The application executes the Non-negative Matrix Factorisation algorithm on a set of textual responses and allows the user to interactively set the desired number of themes. Words representative of each theme are clustered together and when selected, are highlighted in their corresponding textual messages.

1. Daniel D. Lee and H. Sebastian Seung (1999). "Learning the parts of objects by non-negative matrix factorization". *Nature* 401 (6755): 788-791.

2. Wei Xu , Xin Liu , Yihong Gong, Document clustering based on non-negative matrix factorization, Proceedings of the 26th annual international ACM SIGIR conference on Research and development in information retrieval, July 28-August 01, 2003, Toronto, Canada.

## 02.25 - 02.40

### **Technology Adoption in Education: Videoconferencing and Audience Participation**

*Jim Phillips (jim.phillips@med.monash.edu.au) & Max Jory (max.jory@med.monash.edu.au), Monash University*

To assist planning and delivery of educational services, over the last 3 years our information technology committee has been monitoring students' information and communication technology capability. Technology adoption curves can estimate student readiness to implement videoconferencing within educational institutions. In 2006, 82% of second year students surveyed reported having home broadband internet connections. This proportion has increased to 92% in 2008. Student webcam ownership was 30% in 2006, but is now at 49% in 2008. There is also an increase in the proportions of students who are videoconferencing. In 2006, 17% of students reported that they videoconferenced, with the number increasing to 23% in 2008. As of 2008, almost 50% of students had the necessary equipment to engage in videoconferencing (i.e. webcam, microphone and speakers). As webcam ownership has been increasing by 10% each year, this suggests that with the appropriate software, videoconferencing might be possible within the student environment in about 3 years. In 2008 we also monitored mobile phone capability for teaching and administrative purposes. The proportion of students who possessed mobile phones (99.6%) was greater than home broadband connections (92%). In this cohort, 68.1% reported their mobile phones were web-enabled. On the whole, students were favourably disposed to using mobile phone applications for learning purposes: 1) 87.1% were in favour of receiving SMS for administrative purposes; 2) 73.5% were willing to send text messages 'SMS' for administrative purposes; 3) 64.8% indicated that they were prepared to use of mobile phones to obtain feedback (i.e. obtain answers to multiple choice questions), and 4) 53.4% of students were also prepared to send messages during classes for assessment purposes (e.g. answers to multiple choice questions). Nevertheless, our experience with QR codes suggests it will be just as important for students to know how to use the functionality in their mobiles.

## 02.45 - 03.00

### **Tinkering for Environmental Education**

*Ian MacColl (imaccoll@gmail.com) & Peta Wyeth (peta.wyeth@qut.edu.au), Queensland University of Technology*

In this presentation we introduce a project aiming to develop a curriculum framework and technology toolkit for environmental education. The toolkit will consist of mobile and physical

computing technologies, including sensing, actuating and visualisation tools, for collecting, manipulating and sharing environmental data in schools and environmental education centres.

The United Nations has declared a Decade for Education for Sustainable Development (2005-2014) to "challenge us all to adopt new behaviours and practices to secure our future". This project brings together Education Queensland, Brisbane City Council and Queensland University of Technology to respond to this challenge by developing a framework and technologies to support effective learning and teaching strategies identified in the National Environmental Education Statement for Australian Schools.

The approach is both constructivist (Piaget) and constructionist (Papert), drawing on ideas about authoring and making from transformation design (McAra-McWilliam), and taking the view that computing is a unique learning tool because of its malleability. As the Exploratorium eloquently puts it (for a different context):

*Tinkering is what happens when you try something you don't quite know how to do, guided by whim, imagination, and curiosity. When you tinker, there are no instructions – but there are also no failures, no right or wrong ways of doing things. It's about figuring out how things work and reworking them. Contraptions, machines, wildly mismatched objects working in harmony - this is the stuff of tinkering. Tinkering is, at its most basic, a process that marries play and inquiry.*

Two aspects of this project are relevant for this workshop. Firstly, the project is an example of glocalisation, working at the neighbourhood level of local primary schools to have an impact on the global scale of the environment. Secondly, the approach based on tinkering is an espousing of hacker values such as creativity, sharing, rationality and freedom, adopting the view that engagement is best achieved through appropriation.

### 03.05 - 03.20

#### **Recommending Urban Citizens to Social Butterflies**

*Laurianne Sitbon (laurianne.sitbon@nicta.com.au), National ICT Australia (NICTA)*

Social Networks are going through a new era with their expansion on Internet. While most of the virtual connections are reflecting real life connections, online tools can also be used to create real life connections from the virtual connections. Civic engagement could be improved by improving connections between citizens and the creation of groups on diverse topics online and in real life. The behavior of users on the web has evolved from a wandering form (navigation through links between web pages) to a requesting form (with the golden years of search engines) and now is heading towards a passive form where the system are more and more expected to provide users with meaningful recommendations.

Most online social networks suggest groups or other users to one user based on a kinks analysis through the network. However users share more than that with the system nowadays and we believe that all the semantic information available about users and groups should be used in the recommendation process. In the context of local civic engagement, geographic and possibly demographic information should also be taken into account to ensure accurate linkages.

Standard approaches in the area of content-based recommender systems usually deal with the contents as bag-of-words and are based on major topics of interest. However, politically-oriented contents can very well be very similar in terms of topics but totally opposed in terms of perspectives. If one thinks of 2 users holding opposite opinions on a civic topic, being recommended to each other might dramatically decrease their trust into the recommendations made by the system.

The approach we propose to deal with the diversity of sources of information (geographic and semantic) and to deal with the opinion held by users on topic at the same time is based on a matrix representation of a user, or a group of users. The matrix representation contains co-occurrences between the words used in the users' environment, which then reflects the perspectives in relation to the topics. Similar topics held in different perspectives would then be represented in different ways. A matrix representation also allows for the integration of discrete

data in the model of the user. Finally, many reduction schemes can be used to reduce the vocabulary mismatch that could exist between similar users.

The most important question still to be solved is how to define the similarity or complementarity between two users or between one user and an existing group and account for partial agreement or disagreement given that people are usually interested in many different things at once.

### 03.20 - 03.40 AFTERNOON TEA

### 03.45 - 05.00 KEYNOTE (LaBoite Theatre)

#### The City is Here For You To Use

*Adam Greenfield, Nokia*

As part of the HCSNet Workshop on Social and Mobile Technology to Support Civic Engagement, and NICTA Queensland's Big Picture seminar series, we are pleased to announce a public keynote presentation by Adam Greenfield, author of 'Everyware' and Head of Design Direction for User Interface and Services at Nokia in Helsinki, Tuesday 14 July 2009, 3.45pm for 4pm start (to 5pm), LaBoite Roundhouse Theatre, 6-8 Musk Ave, Kelvin Grove QLD 4059.

Over the past few years the "computer" has begun to disappear into the fabric of everyday life, its power to collect, store, process and represent information diffusing into the objects and surfaces around us. Things as ordinary and seemingly familiar as running shoes, elevators and lampposts have been reimagined as networked devices, invested with unexpected new abilities. Meanwhile, the phones we carry have become ever more powerful "remote controls for our lives."

Proponents and enthusiasts argue that no domain of human behavior will be untouched by this transformation, but relatively little thought has been given to specifically how these changes might unfold at the scale of the city. How will the advent of a truly ubiquitous computing change our urban places - both the way they're built, and the way we live them? In this talk, Everyware author Adam Greenfield tries to wrap his head around this dynamic set of conditions, to clarify what's at stake and to offer some potential frameworks for building humane and livable cities in the age of ambient informatics.

