
UrbanxD :: Designing Human Interactions in the Networked City

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Abstract

Interaction Design, in an urban context, is an increasingly important field of research. City populations are currently in a state of rapid flux. Conurbations are fast becoming a hybrid of the physical environment and the digital datasphere. How we, as physical beings, will connect with, interpret and adapt this increasing dataflow residing in our cities is already becoming a significant research question. The SIG organisers will frame the discussion through a human-centred view of the concerns, experiences and behaviours that may occur in cities of the future. By adopting an approach of Thinking and Doing it is hoped that the SIG will act as a catalyst for community building.

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Introduction

Cities have always raised particular issues for technologists and researchers. But today, more so than ever, a transformation is taking place in how our cities work. Cities are being laced with sensors, which in turn generate urban informatics experiences, imbuing physical space with real-time behavioural data [1]. A digital landscape overlays our physical world and is expanding to offer ever-richer experiences. In the cities of the future, computing isn't just with us; it surrounds us, and it uses the context of our environment to empower us in more natural, yet powerful ways [2].

The vision of Ubicomp is currently being manifest in Pervasive Computing, and the Internet of Things, but rather than casting the human at the centre of this vision, as proscribed by [3], today's citizens appear to be engaged either as consumers or nodes in the vast network that comprises the city. What is clear is that the urban fabric itself is becoming increasingly reflexive and responsive, and this in turn has numerous implications for the design and experience of cities as a result.

Research in the Urban Environment

Explosive innovation and adoption of computing, mobile devices, and rich sources of data are changing the cities in which we live, work, and play. It's about us, and how computing in the context of our cities is changing how we live. It is envisaged that the urban spaces of the future will be saturated with both visible and hidden media that gather and transmit information. How we as physical beings connect with, interpret and shape the increase of data residing in our environment will be a significant challenge.

Researchers and industrial practitioners are addressing this challenge from two main perspectives: a top-down systemic approach; and a bottom-up emergent approach.

A top-down systemic approach

The systemic approach to research in the urban environment can be witnessed in the growth of Networked or Smart City solutions that are being proposed to governments and regional planners by global ICT corporations, such as the IBM Smarter City, [4] and Cisco's Smart+Connected Communities [5]. These large urban development projects address infrastructure issues such as transport, pollution, sustainability and security; they reflect 'big thinking' at an urban level. As a result of this approach we have witnessed a steady growth of purpose built 'smart cities', each one acting as a laboratory for the design and deployment of fully integrated solutions. Most developed is Masdar in the UAE [6] but examples reflecting this approach include New Songdo City in South Korea [7] and the European contender PlanIT Valley in Portugal [8]. In each of these cases real estate developers, global ICTs and governments are attempting to build urban centres from the ground up, each one filled with technologically enhanced infrastructure and services. The implication of these experimental developments is that such grand conceptions will determine how future cities will be built.

A bottom-up emergent approach

A counterpoint to the top-down strategy is the bottom-up, human-centred, grassroots approach that is characterised by emergent forms of community intelligence demonstrated by newly connected urban

dwellers. Inspired by the open-source movement, individuals, self-organising groups and whole communities are beginning to aggregate the layers of data that increasingly permeate the urban environment in order to create a new generation of products and services. As an example, Homeless SMS was a recent service provision project in response to the fact that more than 70% of homeless people in London own a mobile phone [9]. For other examples see: Kitchen Budapest, Human Cities EU culture programme project. This heterogeneous approach embraces the complexity of cities and city living and seeks to both add to, and build upon, the layers of data that now envelop our urban environments.

This phenomenon is happening now in isolated enclaves across the world's cities. Whether it is community activists seeking to effect change in where we live, individuals exploring the datascape or the next generation of creative professionals seeking out new business models made possible in the connected city, what is clear is that each of these groups are examples of how such activity has the potential to inform how each one of us might lead our lives in the hybrid city.

The multi-level hybrid city

What demarcates the top-down approach from the grassroots approach to the hybrid city most clearly is the level at which they seek to operate. The first takes a systemic perspective, working at an urban level and addressing issues such as transport and energy, while the second approach operates at the level of the individual or group. By taking a grassroots view of how cities develop, the hybrid approach will provide the opportunity to re-think what intelligent connected communities of the future might actually look like. This

is not to dismiss the top-down approach espoused by governments and multinationals, it is merely to point out that efficiency alone does not make a city smart. It is the individuals who inhabit cities that have made them smart in the past and, in that respect, the future will not be different.

SIG Objectives

The aim of the SIG is to raise interest in the emergent topic of urban interaction design and to provide a forum for interested researchers to explore a number of key themes and trends:

- Culture and art: discovering resources from the past, imagining visions of the future
- Sustainability: renewables and efficient use of resources
- Mobility: transport, transit and navigation
- Social: connectedness and belonging
- Economic: emerging models of creation and consumption
- Migration: population flux and the formation of mega-cities

The overall goal of the SIG will be community building. The SIG will provide a forum for the exchange of ideas and concepts with the possibility of future collaborations. Specifically the SIG will develop plans for a workshop in the area of urban interaction design for CHI14.

Organisation of the SIG

The proposers of this SIG comprise the consortium of the newly funded EU FP7 Co-ordination Action in

UrbanIXD. The SIG provides a timely opportunity to define and consolidate a coherent research community working in the domain of technologically augmented, data-rich urban environments; with particular focus on the human activities, experiences and behaviours that occur within them. In preparation for the SIG, initial participant engagement and discussion will be managed through the UrbanIXD website. The website will also ensure the enduring display of all materials and ideas produced during the website, thereby giving the SIG longevity beyond the timeframe of the conference.

The SIG will be divided into 5 sections:

[5 mins] Introduction to the Aims and Objectives of the SIG

[15 mins] State of the Art :: A brief review of research in the field, highlighting a human-centred approach to urban interaction design

[30 mins] Envisionment :: Interfacing with the City – Participants will take part in themed breakout groups, that will be facilitated by the SIG organisers. Visual materials based on images gathered prior to the SIG will be provided as a catalyst for these discussions.

[20 mins] Report back to the SIG

[10 mins] Plan for the Future :: Discuss mechanisms for engagement with the UrbanIXD network and specific plans for CHI14.

Intended Audience

As the aim of this SIG is to generate discussion and to collaboratively identify design issues, we would like to encourage attendance from a mix of people at different career stages, both creative practitioners and academic researchers. As interdisciplinarity is an important feature of this SIG, participants from a range of backgrounds in the fields of technology and creative design are welcome to attend.

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