



NETWORKED URBAN SCREENS AND PARTICIPATORY PUBLIC SPACES

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Large video screens have become a distinctive aspect of contemporary cities. Despite their initial history as a medium predominantly used for advertising, recent developments suggest they can offer innovative tools for exploring new modes of social interaction and cultural exchange. This paper argues that large screens such as the one in Melbourne's Federation Square represent a new generation of screens, both in terms of spatial location and civic orientation. Drawing on fieldwork conducted in Australia, the Netherlands and the UK, a model is presented for three emerging 'alternative' uses of large screens. It is argued that, in the context of high-speed digital networks such as Australia's National Broadband Network, urban screens now have the potential to move beyond 'ambient television' to play a role in initiating new collective interactions in public space.

INTRODUCTION

The roll-out of the National Broadband Network (NBN) marks a critical moment for the future of Australian cities. High-speed broadband networks such as the NBN are profoundly altering the relationship between communication, place and social agency. As access to digital networks becomes near ubiquitous, new possibilities for citizen participation in the making and remaking of city life are emerging. What [Klein \(2004\)](#) describes as 'scripted spaces', in which possibilities for agency were determined more by the spatial constraints and ambiance established by architecture, are increasingly being augmented by what [Sassen \(2011\)](#) describes as 'a sort of open-source urbanism'. While Sassen was referring primarily to the use of digital feedback systems to fine-tune provision of local government services, the concept has a wider applicability to the organisation of urban public space.

This paper will examine the impact of high-speed broadband in relation to a particular urban setting – large video screens situated in public spaces. While large screens pass unconsidered in most debates about broadband, their transformation is indicative of a broader dynamic affecting urban space. The paper will begin by considering the implications of ubiquitous digital networks for contemporary cities. It then offers a brief history of large video screens located in public space and argues that a 'second generation' of screens demands that we reconsider their potential as place-making resources. From this basis, the paper considers the ways in which high-speed broadband is instigating further significant changes in the utilisation of this infrastructure. In particular, the paper will focus on two trajectories:

- I) the shift from treating the screen as a display surface to an interface capable of supporting new modes of interaction including user-generated content; and
- II) the extension of the screen's reach from local and physically proximate viewers to a networked and potentially transnational audience.

Together, these shifts open a space for new modes of civic engagement and new practices of urban communication.

NETWORKED CITIES

The impact of digital networks on cities has now been an object of study for several decades. Early approaches tended to be split between those focusing primarily on how digital networks were implicated in the restructuring of urban and regional economies, and those which viewed the Internet as promoting a new sphere of activity largely separate from the materiality of the everyday city. The first approach was typified by [Castells' \(1989\)](#) examination of changing industry models and labour-force demographics, and [Sassen's \(1991\)](#) influential conceptualisation of the 'global city' as the networked 'command and control centre' of global capitalism. The second approach was typified by the dot-com era 'cyberspace' manifestos of those such as [John Perry Barlow \(1996\)](#), and [Esther Dyson et al \(1994\)](#), which treated the Internet not only as profoundly immaterial but fundamentally de-materialising.¹ This tendency was repeated, albeit in a more nuanced way, by those such as [Rheingold \(1993\)](#) and [Mitchell \(1995\)](#) who saw new modes of 'electronic community' potentially displacing the primacy of embodied interactions as bricks gave way to bytes.

While both approaches captured some important aspects of the restructuring of social life by digital networks, they tended to ignore the lived experience of mediated urban space. For Castells and Sassen, this was because they situated their analysis at the macro-level of industry restructuring and flows of capital and labour. For 'cyberspace' theorists, this was because they were more concerned with how networks constituted a new 'placeless' realm in which association would be governed by laws of 'interest' rather than propinquity. But, despite many declarations to the contrary (e.g. [Cairncross 1997](#)), place continues to matter in networked cities. Over the last five or so years there has been growing recognition that networks don't only work at macro-levels, or in some kind of parallel universe called 'cyberspace', but are deeply and profoundly implicated in the messy, embodied and material spaces of everyday life. From this perspective, the experience of contemporary urban space is now shaped, and even *co-constituted*, by digital networks ([McQuire 2008](#), [Eckhardt et al 2008](#), [Foth 2009](#), [Gordon and de Souza e Silva 2011](#)).

This new paradigm partly reflects the impact of practical developments, most notably the exponential growth of mobile phones. Far from flattening and homogenising place, the growing use of mobile devices has sparked interest in understanding the techno-politics of place-specific public communication. In fact, the last decade has seen a world-wide explosion of discussion, in which technical questions of access overlap social issues such as new protocols for negotiating face to face encounters while permitting real time interruptions via the phone. More recently, we have seen the deployment of a new generation of technologies such as smart phones, tablets and other mobile devices, in conjunction with the relaxation of US military restrictions on civilian use of Global Positioning Systems (GPS) since 2000. The latter key technical threshold has sparked a range of new practices using location-aware devices and geo-spatial data, including leading commercial applications such as Google Maps, and location-based social networking services such as FourSquare and Facebook 'Places'. It has also inspired the emergence of a wave of informal, non-market practices, such as locative media art ([Tuters 2009](#)), and the types of dynamic self-organisation of public space by citizen groups variously named smart mobs ([Rheingold 2002](#)), flash mobs and swarms.

This is the threshold of what I call 'geomedia'. This term needs to be understood in two related senses. First, it refers to the fact that contemporary media are utilised in a much wider range of settings than the older defaults such as home and office, or specialised sites such as cinema. Media are now routinely embedded throughout urban infrastructure in a variety of forms and scales, from information kiosks to large video screens, while the spread of wireless networks and mobile devices enables the temporary appropriation of almost any public space. From a media paradigm conditioned by relative scarcity, in which one had to travel to particular, fixed sites in order to watch, listen, or be connected, we are rapidly entering a new paradigm of ubiquity. Second, geomedia refers to the way in which media are rapidly incorporating location-awareness such as GPS systems, thus broadening the potential for use of place-sensitive data and context-aware applications.

If we add the growing deployment of remote sensors capable of automatically monitoring all sorts of environmental conditions, including object-based data technologies such as RFIDs and QR codes, we find ourselves on the threshold of the city as a ubiquitous digital environment in which recursive streams of data begin to impact on situations in ‘real time’ (Townsend 2000). This tendency towards the interlinking of human and non-human ‘agency’ has been variously described as ‘ambient intelligence’ (Aarts et al 2001), the ‘Internet of things’ (van Kranenberg 2008), or, even Latour’s (1993) earlier and more politicised ‘parliament of things’. These descriptions highlight the extent to which public space is becoming subject to new dynamics in networked cities.

The fact that public actors are now immersed within complex socio-technical networks extending throughout the city suggests a need to change how we understand the public. If, as Warner (2004) argues, it was always problematic to conceive ‘the public’ as a pre-existing and stable entity, the present situation has accentuated this complexity. Not only are most urban populations far more heterogeneous than in the past, they are also subject to novel forms of mobility such as tourism and short-term migration. National identity cedes ground to what Ong (1999) calls ‘flexible citizenship’. Moreover, publics now operate in relation to global digital networks which generate overlapping and ‘stacked’ spheres of action. In media studies this has usually been examined in terms of media use by ‘diasporic communities’ (e.g. Geōrgiou 2006). Here I am more interested in the reverse optic: the impact on the public (meaning whoever happens to be in a particular place at a particular time) of the diversity of communication lines that are routinely accessed in the contemporary city.

This new setting has particular implications for public space. While the ‘local’ context of public space remains important, it increasingly has to operate as an *open locality* crossed by new speeds and scales of communication and new potential for action. In this context Anne Galloway (2006) argues there is a growing need to understand the formation of temporary publics that assemble mobile and disembedded actors on a contingent basis around specific issues and events. This new condition underlines the importance of undertaking detailed and situated analyses of the intertwining of digital networks and public space.

PUBLIC SCREENS

At first glance, urban screens seem an unlikely site for the reinvention of public space – after all, the advertising they usually carry is one of the most visible developments associated with its demise. For some, a primary reference point for the effect of urban screens remains Ridley Scott’s influential film *Bladerunner* in which giant screens advertising the benefits of ‘off-world’ life circle above earth’s remnant population abandoned in a ruined cityscape. However, foreclosing other possible screen uses seems premature.

If we date their emergence from the erection of the landmark Spectacolor Board on the old New York Times building in 1976, urban screens are roughly 35 years old.² By the mid-1980s, screens had the capacity to display full colour video at much better resolution. This meant they began to find a home primarily in two sites: on the one hand, premium sporting venues, and on the other, iconic city centre locations such as Times Square in midtown New York and Hachikō Crossing in Tokyo’s Shibuya. Each location favoured a distinct mode of screen use and spectatorship. *Stadium* screens primarily supported specific live events, such as sport or live concerts, by providing close-up vision for mass audiences schooled on the television staple of ‘instant replays’, while *street* screens were primarily used for advertising. Unlike the relatively stationary stadium spectator, the street spectator is usually mobile. Attention is not focused, but, as Walter Benjamin argued long ago, is often fundamentally ‘distracted’ (Benjamin 2003, 269). In this context, street screens placed a premium on spectacular display in order to attract fugitive ‘eyeballs’. Treating the audience as moving targets whose attention has to be caught and held for only a few seconds has tended to perpetuate a fairly narrow mode of programming. Such an approach faces significant challenges in the contemporary cityscape. Once LED became a viable video format in the mid-1990s, screens proliferated across more and more urban surfaces. As screens have become more common, particularly in the high traffic sites that have historically had the

greatest density of innovative advertising displays, the impact of any single screen has been diminished. Instead what stands out is the visual excess of the cityscape as a whole.

This history of using street screens primarily for advertising and stadium screens to support premium live events such as sport has often led to the dismissal of urban screens as a vehicle for other modes of communication. However, over the last five or six years it is possible to observe new trends emerging. An increasing number of screens have been constructed in more traditional public spaces, such as city squares and plazas, rather than in high traffic thoroughfares. These settings open the potential for a broader spread of programming, less constrained by the immediate need to grab attention.

Here I want to briefly describe three models for the alternative use of urban screens. By 'alternative' I mean that these screens show either little or no advertising, and instead seek to display a new range of content, to foster new institutional partnerships, and especially to develop new practices of public spectating. I have characterised the models respectively as

- i) public space broadcasting;
- ii) civic partnership, and
- iii) video art.

These are by no means an exhaustive typology of possible approaches, but serve to indicate new directions.

The 'Big Screen' Public Space Broadcasting project in the UK constitutes the most developed urban screens *network*, comprising some 20 screens in different cities at the time of writing ([BBC 2011](#)). The project was initially inspired by the success of a series of temporary screen-based events staged by the BBC in conjunction with the Commonwealth Games and the Queen's Golden Jubilee in 2002. This led in 2003 to a project to program a large screen in Manchester over an extended period (initially a year), which in turn developed into a pilot program for rollout of up to 10 permanent screens by 2007. In 2008, primarily responsibility for further roll-out devolved to LOCOG (London Organising Committee of the Olympic and Paralympic Games), and 10 more screens have opened. The screens are intended to form part of the 'live site' program of national engagement planned for the London Olympics in 2012.

One striking aspect of this project is that, while the screens have always had a heavy reliance on BBC content, from the beginning they were not seen as BBC-owned or controlled, but depended on partnerships established with a mix of local government, cultural institutions and universities in each city. The driving ambition was to use the screens to support local events, as well as to allow public spectating of a range of cultural events from music to sport. A key aim of the pilot project was to learn more about what sort of programming might work in the context of public space. Reflecting on the early roll-out Bill Morris (then Director of BBC Live Events and now Director of Culture, Ceremonies, Education and Live Sites for LOCOG) divided screen operation broadly between the 'event mode' of established crowd pullers like live sport where the screen is the collective focus of attention, and 'ambient mode' where the audience attention tends to be looser and more transient:

The event mode is the obvious one, but what are the range of other content which, when it's in ambient mode, are still useful in terms of the normal warp and weft of people's daily life? [...] What happens if you put on a soap opera, so there's *Neighbours* or *East Enders*? Is that actually going to make people stop and watch the screen? Against, say, a news information program? What happens if you put a local, non-broadcast, non-commercial film, or a professional artist on, will people watch it? ([Morris 2005](#))

From the beginning, the success of different screens in engaging the community has depended on specific local factors, including the choice of site and the commitment of various partner organisations to support the screen with original content. In cities such as Liverpool, the screens have been used for a wide range of community-related and innovative content, including interactive games. However, following the conclusion of the pilot project, the screens were integrated into a more formally structured network in which local nodes can still

choose to 'opt out' but the default setting is centrally controlled programming from Birmingham. This was partly driven by the BBC's desire to develop a stable model of standardised screen technology allowing more efficient installation and operation, and also by the practical issue of producing significant amounts of local or innovative screen content ([Gibbons 2008](#)). While the network model offers benefits in terms of streamlining content provision and screen maintenance, it has led to concerns expressed by bodies such as the Commission of Architecture and the Built Environment ([CABE 2008](#)) about the lack of integration of new individual screens with the existing urban environment.

The second model, which I call civic partnership, is typified by Melbourne's Federation Square.³ When the site opened in 2002, it included a large screen integrated into the facade of a building facing onto the main plaza. While this orientation away from the street placed it firmly in the new generation, for the first two years the screen was used in what might be called the traditional mode: to run advertising or for public display of commercial television programming. However, under the leadership of a new CEO, Federation Square has increasingly sought to integrate its multimedia assets, including the large screen, into realising its Civic and Cultural Charter. As CEO [Kate Brennan \(2009\)](#) describes it:

The majority of Fed Square's success is about its engagement with a broad cross-section of the community and the big screen in particular is an integral part of that. So we were really pushed into a situation in which we had to think about what was the most efficacious engagement with the broadest possible community: how we could make the screen work better for events, how could we use it creatively, and for information. It was important to me that this wasn't cluttered up by having advertisements on the screen for X or Y. [...]

Brennan adds:

We were, in a sense, unsure about what we were trying to do. But the things that were working for Fed Square around community, not so much about cultural product, but certainly around community, were the things that we started to focus on. Also, because we took the notion of telling stories as a really important component, we thought we had better tell the story of what was going on here on site as well.

In practice, this has involved sourcing a much wider range of content, both locally and internationally, developing programming relevant to specific communities, as well as programming information about the site and events in the precinct. While some programming has been more experimental and risk-taking, the overriding strategy has been to use the screen in ways which promote rich forms of community engagement.

The third model I want to describe is that developed by CASZ (Contemporary Art Screen Zuidas) in Amsterdam, which is distinguished by its commitment to displaying contemporary video art in a public context.⁴ As its inaugural curator Jan Schuijren puts it:

I will also never go as far as, for example, the FACT initiative in Liverpool or what is being done here at Federation Square, where programming is partly catered to the community. CASZ is not meant to be, and will never be, a community screen – it has been conceived as an arts stage. And that's a clear difference in our intention. ([Schuijren 2008](#))

This orientation reflects the specific genesis of CASZ as a collaboration between the Virtueel Museum Zuidas, the Zuidas district, and the Foundation for Art and Public Space. It has also led to specific strategies for displaying contemporary art. Interestingly, while Schuijren was happy to display work which provoked reactions and incited criticism, he was less attracted to the new media staple of 'interactivity'. Rather, he sought to explore how programming might relate to patterns of audience mobility. After an initial year of operation when Schuijren admits he tried to be 'very anticipatory' in relation to audience moods and rhythms, in 2008 he moved to a simpler and more repetitive structure of programming. As he described it:

The fact that we have this ‘regular’ audience, so to speak, means that we have to work *for* them. Let me put it another way. For me, there are many reasons not to work, at least *yet*, with interactive material or interactive content. Why? Because I think that people who *have to* use that square every day in order to go home, or to go to work, or to cross it to go to the university, would not want to be asked to interact five days a week. I don’t think that will work. If eighty percent of your possible audience is returning more than four days a week, you have to be really careful what you *ask* from them. And, of course, you also have to carefully decide what you *offer* to them, and *how* you offer it to them. [...] That’s also why this repetition is important and why it’s so beautiful in itself to have the opportunity to have a regular audience. This audience that comes every week, every day of the week, time and time again, allows us to actually to build something over time. ([Schuijren 2008](#))

NETWORKING URBAN SCREENS

These snapshots point to some of the ways in which large video screens can become distinctive new public settings that combine attributes of both media and architectural space in novel and still relatively under-explored ways. What I want to consider now is how high-speed connectivity is further transforming this situation. At the same time that large LED screens became cheaper, more robust and therefore more viable as public infrastructure, bandwidth became progressively cheaper and more widely distributed. Whereas most large screens in the 1990s were developed as stand-alone installations, by the 2000s there was growing potential to link screens without exorbitant cost. The formalisation of the UK Public Space Broadcasting project as a *network* is one expression of this capacity (although it used dedicated cables rather than public Internet connectivity). But, in principle, any screen could now link relatively cheaply to others. Second, growing penetration of mobile devices such as phones created new possibilities for constructing flexible interfaces between large screens and individual members of the public. Rather than having to take turns at a console, the mobile phone opened a way for displaying content generated by multiple users on large public screens.

To explore these possibilities for new forms of public communication, a partnership was developed between researchers at the Universities of Melbourne and Sydney, and partner organisations Fed Square Pty Ltd, the Australia Council, and Art Center Nabi in Seoul.⁵ The objective was to commission interactive art works specifically for display on large screens, so as to engage diverse members of the public who happened to be in a particular public space. Second, we wanted to utilise the new capacity to network large screens in order to develop a live link-up between screens in Melbourne and Seoul, thus constructing a temporary ‘transnational public sphere’. The choice of a partner in Seoul reflects the new spatio-temporal contours of global networks: like many other Asian cities, Seoul is ‘closer’ to Melbourne—in terms of time difference—than Perth is. The project stands at the crossroads of two ideas of the public sphere: the older conception in which the public sphere is rooted in physical space (the street, the plaza or agora) and the modern conception in which the public sphere operates primarily as media space. Our interest was the emergence of a third space in which certain elements of the earlier models were intertwined rather than in separate or oppositional domains.

The first ‘urban media event’ event was run in August 2009, on the occasion of the opening of a new urban precinct in Songdo, Incheon.⁶ *Come Join Us Mr. Orwell* (organised by Art Center Nabi) involved a combination of live camera links between the two sites, screenings of artists’ videos, and live performance. It also included two interactive works, specifically commissioned for the research project, which used SMS as the interface to the large screen. *SMS_origins* (by Australian artists Leon Cmielewski, Josephine Starrs and Adam Hinshaw) allows participants to text the details of the birthplace of their parents and themselves to the screen. The software translates the information into lines on a world map connecting the different places. Audiences in both sites see the creation of a real time map of the co-ordinates

reflecting the collective input of participants from each city. The graphic design of the work is deliberately low-tech and simple, emphasising the process of audience input rather than offering a rich palette for personal expression. The limited options means the work is best described as user-influenced rather than user-generated. Nevertheless, like other crowd-sourced participatory art, the content of the work will be different each time it is displayed, depending on the composition of the audience. *Value@ Tomorrow City* (by Korean artist Seung Joon Choi) used the screen more as a public bulletin board. Audiences were asked to respond to the question: ‘As a member of the future city, what do you think is the most important value?’ When messages were sent, the ‘values’ appeared on the screen as key words. If the words entered by one person were identical or similar to those used by others, the size and position of display changed. By using ‘folksonomy’ (an informal taxonomy generated by users) as the basis for the visuals, the arrangement was not only dynamic in response to user-input but subject to self-organisation.

What lessons can be learnt from an event like this? Partly because it was in ‘event’ mode, the mode of interaction with the screen had to be more tightly defined than we might otherwise have chosen. Since it was a pioneering undertaking, there were certain technical constraints, some of which proved difficult on the night. Despite these limitations, our audience research found plenty of interest from participants in the different cities in using this new communication platform. While part of this interest was undoubtedly related to novelty, participants also expressed enthusiasm for the way the screens were able to ‘connect’ specific audiences in each site as well as those assembled in different sites/cities.⁷

CONCLUSIONS

Clearly, capacity to influence the public environment is not new. However, using flows of data to do this in ‘real time’ is. As [Crang and Graham \(2007, 811\)](#) note, ‘the environment has always been recursively influenced and influenced by action. What these technologies do is change the temporality of that action’. Real time interactivity can be manifested in many different ways. An important aspect of the design of both artworks was their capacity to display data in a manner which did not ‘average’ it, but retained traces of individual inputs while displaying each contribution as part of a dynamic network.⁸

This capacity to register, process and display data gathered from a multiplicity of sources is a direct outgrowth of access to low cost, pervasive digital networks. Our initial research indicated that audience members gained pleasure from participation. This might be partly due to the fact that the capacity to mark make a mark in large-scale public spaces is relatively rare, especially for young people. Using the large screen in this way enhances a sense of ‘belonging’ in the space but also a sense of engagement with others who are watching or doing the same activity. This finding resonates with what others such as CASZ and the BBC have learned about the importance of local relevance to the programming of public screens. It also underlines the importance of designing works that enable easy transitions between different modes of engagement such as watching and doing.

In future iterations of the project the intention is develop more complex interfaces enabling richer modes of communication addressing dimensions of both embodied and media space. However, realising these possibilities is not an automatic function of building technological capacity. Digital networks in the current conjuncture are striking in the manifest tension between the new models of participation emerging simultaneously across so many sectors, and the techno-political horizon of what [Deleuze \(1992\)](#) famously dubbed ‘control society’. Moreover, the success of large screens as a place-making infrastructure is critically dependent upon location and integration into well thought out public spaces. It also demands institutional settings treating the screen as a dimension of public space, and which value public input. The mark of success is not necessarily spectacular productions but modest experiments which create space for new transversal forms of citizen-to-citizen engagement, collaboration and dialogue. In this way, large screens situated in public space can begin to offer a distinctive means for connecting erstwhile strangers—both those in the same physical space and those in a linked space elsewhere—in an experimental mode. They point towards new possibilities for

overcoming the barriers of public fear and mutual suspicion that have intensified in the ambient fears of post 9/11 culture.

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ENDNOTES

1. [Dyson et al \(1994\)](#) went as far as to proclaim: 'The central event of the 20th century is the overthrow of matter'.
2. Spectacolor was actually a programmable animated electronic sign using an array of krypton incandescent bulbs to produce what now seem to be fairly rudimentary monocolour graphics. Its key innovation over existing signage was its capacity to display variable content.
3. Federation Square was designed by LAB architects and built on a 'greenfield' site in central Melbourne. It comprises a number of major cultural institutions as tenants, and is managed on behalf of the State Government by Fed Square Pty Ltd under a Civic and Cultural Charter.
4. Zuidas is a new urban development bridging Schipol airport and the centre of Amsterdam, and is intended to function as a 'gateway' to the city.
5. LP0989302 'Large screens and the transnational public sphere' is funded by the ARC 2009-13.
6. New Songdo City is arguably the world's best-known example of a 'smart city' built from scratch over a relatively short period. The urban media event took place in Tomorrow City, a precinct within Songdo built by SK.

7. Participant comments from research conducted in Melbourne and Songdo on the night included: *“Different scale and many people are participating here”. “As it’s an outdoor event, the scale is much bigger [than indoor ones] and I was impressed by the overwhelming screen images and sound ... I felt connected [to Melbourne]”. “I felt difference, but I felt a sense of connection....”. “It was very new that we could directly participate [in art performance] through mobile phones. My previous experience with media art was one-dimensional, where the screen images were changed responding to my movements”. “It was fascinating to see that [I] could directly take part in the artworks through my texts”. “People in Melbourne and I could share each other’s words [values]”. “I felt very close to them as if I couldn’t feel the physical distance. It’s hard to say that a sense of connection has been created all of a sudden. However, I feel that we [Koreans] are a little bit connected to Australia’s art and media through texting and visual screening”.*
8. In *SMS_Origins*, when each mapping first appears, it is identified by the three place names and the line linking them is traced in bold. As the next mapping proceeds, the first line becomes part of the network. In *Value@Tomorrow City*, each term is tagged with the last digits of the sender’s phone number.

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