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# Networking Serendipitous Social Encounters in Urban Neighbourhoods

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## Abstract

In urban residential environments in Australia and other developed countries, Internet access is on the verge of becoming a ubiquitous utility like water or electricity. From an urban informatics perspective, this chapter discusses emerging qualities of social formations of urban residents that are based on networked individualism and the potential of internet-based systems to support them. It proposes that appropriate opportunities and instruments are needed to encourage and support local interaction in urban neighbourhoods. The paper challenges the view that a mere re-appropriation of applications used to support dispersed online communities is adequate to meet the place and proximity-based design requirements that community networks in urban neighbourhoods pose. It argues that the key factors influencing the successful design and uptake of interactive systems to support social networks in urban neighbourhoods include the swarming social behaviour of urban dwellers, the dynamics of their existing communicative ecology, and the serendipitous, voluntary and place-based nature of interaction between residents on the basis of choice, like-mindedness, mutual interest and support needs. Drawing on an analysis of these factors, the conceptual design framework of an 'urban tribe incubator' is presented.

## Introduction

The area of technology and human interaction is cross-disciplinary and requires many different academic fields and design practices to work together effectively to generate a better understanding of the social context and human factors in technology design, development and usage. This chapter focuses on the social communication aspects of this field and hopes to establish a greater awareness for the contribution community media and communication studies can make to the field of human computer interaction. It seeks to build a theoretical foundation for an analysis of two interrelated issues which are discussed in turn.

First, the importance of place and the continued purpose and relevance of urban neighbourhoods is established. New media and networked information and communication technologies have not led to the diminishment of local place and proximity. However, they have given rise to new types of social interaction and to new emerging social formations. Understanding the nature and quality of interaction in these new social formations can inform the successful animation of neighbourhood community and sociability in them.

Second, appropriate opportunities and instruments to encourage and support local interaction in urban neighbourhood networks are not limited to technology, but technology can be a key facilitator. Thus, system designers and engineers are crucial allies to social scientists in the search for hybrid methodologies that integrate community development approaches with technology design. The chapter questions whether it is sufficient to appropriate tools originally designed for dispersed online (that is, virtual) communities in the context of 'community networks' (Schuler, 1996) for urban neighbourhoods. Purpose-built tools and instruments are required that afford (a) interactive linkages between the resident's communicative ecologies of cyberspace and local place; and (b) personalised social networking between proximate neighbours *of choice*. Such an approach would allow the non-virtual and place-based assets in a resident's portfolio of sociability to become more attractive. It would establish an opportunity to create and maintain local social ties, and ultimately to find out who is living next door and who is socially compatible.

From the discussion of these issues, some of the key factors influencing the successful design and uptake of interactive systems to support social networks in urban neighbourhoods are derived. Drawing on an analysis of these factors, the conceptual framework of an 'urban tribe incubator' is presented.

This chapter seeks to set up the interdisciplinary conceptual foundation necessary to drive a thorough theoretical and empirical investigation into the interaction of people, place and technology and the way they function together to facilitate access to the social and cultural life of cities. The purpose of this paper is not only to introduce and illustrate the issues at stake and to present a design framework but also to stimulate transfer and exchange of knowledge across academic disciplines and especially to invite discussion and comment from a broader interdisciplinary audience. Supporting efforts to build bridges between the social and the engineering sciences is paramount to the field of technology and human interaction, and this paper contributes to the development of a dialogue between these disciplines. An interdisciplinary approach that brings together views and expertise from sociology, urban studies, interaction design and related disciplines will assist with efforts to facilitate urban neighbourhood community building, social inclusion, public consultation and debate, fair access to local information and services, urban sustainability and healthier local economies.

## **Technical Affordances and New Social Formations in the Context of Networked Individualism**

The Internet has found its way into many households of urban dwellers in Australia and other developed countries, to the extent that Internet access is on the verge of becoming a ubiquitous utility like water, gas and electricity. The Internet has

advanced to become a communication tool that co-exists with other established communication devices such as the telephone, short message service (SMS), new media and face-to-face interaction. E-mail, instant messaging, online chats and other online applications are now instrumental in establishing and maintaining social ties with family, friends, co-workers and other peers, thus creating a private 'portfolio of sociability' (Castells, 2001, p. 132).

The Internet has entered people's everyday life and plays a significant role in the communication pattern of urban residents. The Internet has not substituted but supplemented offline interaction with online interaction (Fallows, 2004; Wellman & Haythornthwaite, 2002). People still chat on the phone and meet face-to-face. However, the Internet as well as mobile communication devices such as mobile phones, laptops and personal digital assistants (PDA) allow people to maintain social ties in different ways by taking advantage of new features. The mobile phone introduced place-independent communication, and the emerging third and next generation mobile telephony adds audiovisual tele-presence. Email and SMS afford asynchronous communication and notification mechanisms. Online chats offer broadcast-style many-to-many communication, whereas private chat rooms enable users to engage in multiple peer-to-peer dialogues. Instant messaging tools combine the features of online chat rooms with ambient awareness by adding availability or other status information to a user's nickname (e.g. 'Elija | busy', 'Tim | out to lunch').

However, these tools are used more often to connect with family, friends, co-workers and peers and less with neighbours. The telephone has long evolved into a ubiquitous communication device, but it per se has not contributed to overcome 'urban alienation'. Sociologists such as Wellman (2001; 2002; Wellman *et al.*, 2003) describe how people construct their social networks with the help of the telephone and other devices. Wellman argues that while people become more accustomed with the features these tools offer, the nature of the social ties people establish and maintain changes from door-to-door and place-to-place to person-to-person and role-to-role relationships. He creates a holistic theoretical framework that builds on the dual nature in the interplay between 'community' and 'the individual'. He describes the emerging qualities of this behaviour as 'networked individualism'.

Residential areas such as apartment buildings, townhouse complexes, master-planned developments and the residents and tenants of these units form the focal point in this chapter to examine the interplay between people, place and technology. The results and findings of this theoretical analysis will help to shed light onto some aspects of the community question, especially the continued purpose and relevance of neighbourhoods in urban habitation, by investigating the ironic relationship between endemic urban alienation and the widespread use of mobile and ubiquitous communications technology by urban dwellers that allows them to interact with each other (Walmsley, 2000).

Before this technology became ubiquitous and entered the everyday life of city dwellers, predecessors and variations had been designed for or have first become popular in workplace-based environments to support communication and collaboration among professionals. This was later followed by their diffusion into everyday life and their re-appropriation for social use. The act of re-appropriation, e.g., from the professional use of a Pager to the social use of SMS, implies that there are opportunities to design and develop purpose-built systems from the ground up that

– instead of merely trying to make ends meet – take the unique requirements into account of the social and place-based context they are used in. Tools to animate and network urban neighbourhoods require a consideration and treatment of notions of sociability, place, privacy and proximity in order to take full advantage of the communicative opportunities that this environment offers its inhabitants and the wider society.

## **Place Matters: Communication and Interaction in Urban Neighbourhoods**

Tönnies' (1887) idea of community as *Gemeinschaft* implies a well-connected, place-based, collective, village-like community. However, this notion of community represents an overly romanticised image of community and ignores more contemporary forms of community which have been explored by recent sociological studies (e.g., Amin, 2007; DeFilippis, Fisher, & Shragge, 2006; Delanty, 2000; Shaw, 2008; Wellman, 2001, 2002; Willson, 2006). *Gemeinschaft* might resemble 'Hobbiton' in 'The Shire' described by Tolkien (1966). This communitarian notion (de Tocqueville, 2000; Etzioni, 1995) is still frequently referred to in the community development literature, although the homogeneous, egalitarian and all encompassing nature of *Gemeinschaft* is a utopian ideal which is less and less compatible with contemporary characteristics of community as social networks in today's network society.

Before the advent of modern information and communication technology, human interaction was limited by the reach of the physical presence of self or the representations of self (e.g., letters and photographs) and available means of transportation. The need to socialise and to communicate was commonly satisfied with family members in the same household, with friends and peers nearby, at work or within the vicinity of the neighbourhood people lived in. Human relations were door-to-door or place-to-place (Wellman, 2001). The fact that people residing in the immediate surroundings were known also established a feeling of security, community identity and a sense of belonging – a feeling that clashes with the experience of living in today's high density, compact urban environments.

The invention and introduction of new information and communication technologies into society has usually been accompanied by foresights which predict that people will be less dependent on place and location. To an extent, this is true. The phone was the first major invention to introduce personal tele-presence and to allow everybody to communicate in real time with others outside their own physical locality. Instead of being restricted to people within proximity of oneself, the phone enables long-distance communication to maintain work and social relationships. However, it is unlikely that anyone lifts the telephone handset to introduce themselves to a neighbour nearby they have not met before.

The Internet affords both synchronous and asynchronous applications which enable communication between one or multiple users, one-to-many or many-to-many broadcasts to a closed group, and public announcements to an open audience. The abstract nature of internet-mediated communication gave rise to the widespread use of

the metaphor 'cyberspace' which visualises the emergence of a new spatial dimension.

However, people's bodies cannot be atomised in the same way their audiovisual representations can be digitised, mediated and sent across the world. Thus, people depend and will remain to depend on place and locality and on collocated face-to-face interaction. Bits and bytes travel in the virtual space of flows spanned by the Internet, but humans prefer to travel in the physical space of flows that modern transportation affords. Place and proximity continue to matter in every socio-economic context, because there are no Internet applications that can completely substitute real-time collocated face-to-face interaction. This is evident by rising car and air travel sales (Wellman, 2001, p. 247), by people commuting to work instead of working from home, by the formation of economic clusters, precincts and hotspots where industries based along the same value chain collocate to take advantage of synergy effects. Florida rightly argues that "the economy itself increasingly takes form around real concentrations of people in real places" (Florida, 2003, p. 4). In the light of new urbanism (De Villiers, 1997) and master-planned residential developments (Gleeson, 2004; Minnerly & Bajracharya, 1999), his statement holds true not just for the economy but for society in general.

Attempts to bridge distance for the purpose of 'more than just communication' have seen initiatives such as telework and distance education, yet they remain at the edge of mainstream usage and have not replaced face-to-face interaction (Dhanarajan, 2001; Gillespie & Richardson, 2004). To enable economic efficiencies, the goal of Computer Supported Co-operative Work (CSCW) and groupware applications is to supplement, not substitute, place-based work practices.

Wellman (2002) points out that the dichotomies of 'physical place' and 'cyberspace'; or of 'online' and 'offline', are misleading. Even as the Internet grows exponentially, place-based units such as 'home', 'work' and 'school' remain at the core of our understanding of everyday life. The Internet and other information and communication technology add new qualities to the portfolio of communication tools available to us, enriching our communicative ecology (Foth & Hearn, 2007; Hearn & Foth, 2007), and adding on to the variety of media channels at our disposal. We do not rely on the central location of traditional meeting places anymore such as the market place or town square in order to meet with friends and peers. Instead, we use mobile communications technology which we can carry around (e.g., mobile phone, SMS), or ubiquitous communications technology which we can access anywhere (e.g., wireless networks) not to avoid but to negotiate on-the-fly meeting places and venues anywhere and anytime. Teenagers for example use their mobile phones to arrange meeting places on the spot, this could be the local café, the shopping mall or someone's home (Satchell, 2003). This emerging behaviour introduces challenges to conventional understandings of 'place' and 'public places' and opens up opportunities for residential architecture, town planning and urban design (Dave, 2007; Foth, 2008; Foth & Sanders, 2008, forthcoming; Graham, 2004).

In a lively online discussion about the continued purpose and relevance of neighbourhood communities, one participant (eric\_brisette, 2004) illustrates the point that having less exposure to neighbours (as opposed to co-workers or friends) does not mean that it is less likely that there are in fact prospective friends living in the neighbourhood:

*I guess it all depends on where you live. I live in a rural town of about 10,000. Most people say "hello" or "good morning" to you as you pass them on the sidewalk. I can't say I've known all of my neighbors well, but I have at least spoken with them enough to know a bit about who they are. Visiting larger cities like Boston or New York makes me feel weird. Nobody looks you in the eye, and everyone seems constantly pissed off, almost like everyone is scared of everyone else... yet this all seems perfectly normal to them. [...] Chances are good that there are people in your neighborhood that share your [interests] or are at least [compatible] at the personality level who you wouldn't normally interact with on a daily basis.*

In today's networked society, it is questionable to project the image of the rural village and use it as a best practice 'urban village' model for a city, because of inherent differences between both places and their inhabitants. Yet, the specific characteristics of a city can give rise to a different model of 'urban village' that acknowledge the potential opportunities that this particular environment offers its residents. For example, the simple fact that a city accommodates a larger number of residents could offer the individual greater choice and thus a chance to find the right social interaction partners.

However, the motivation for and process of the search itself remains to be examined. Getting to know someone in their role as a 'neighbour' is less likely than getting to know them in their role as a 'co-worker' or being the friend of a friend. Neighbours may still be part of a resident's social portfolio, but the communication devices used to maintain these ties are inherently place-independent and ephemeral: A phone call or an email does not distinguish between close or distant friends. Proximity does matter when it comes to physical encounters and face-to-face meetings. Most frequent social ties, including online interaction, are maintained with people who can easily be reached physically, that is, they usually reside within the same city, the surrounding suburbs, or the same neighbourhood (Horrigan, 2001; Horrigan, Rainie, & Fox, 2001). The majority of phone calls, SMS and emails help the parties involved to coordinate meetings or social gatherings, e.g. to 'catch up' over coffee in a café nearby.

These ties are primarily based on common friendship, workplace, or interest, and not shared locality. We may be introduced and subsequently get along well with the friend of a co-worker who happens to live in the same street, but it is unlikely that we would have found out about them without the co-worker introducing us first.

Many urban neighbourhoods are the result of what town planners and developers call 'master-planned communities'. Traditional conceptual models of community development limit action to tangible places of public interaction such as kindergartens, public schools, parks, libraries, etc. (Gleeson, 2004). This 'build it, they will come' approach lacks engagement with the findings of recent community development research (Gilchrist, 2004; Pinkett, 2003). It ignores both the human factors involved in urban renewal and sociocultural neighbourhood animation as well as the potential that information and communication technology can offer urban residents such as online community networks and location-based new media (Day & Schuler, 2004; Rheingold, 2002).

Gilchrist points out that “community development involves human horticulture rather than social engineering” (Gilchrist, 2000, p. 269). Social encounters in urban neighbourhoods cannot be master-planned. They are based on coincidence and serendipity. Neighbours meet through friends of friends who happen to live close by; they meet when walking the dogs, or in some cases when a local problem affects multiple residents (Hampton, 2003). However, more often than not, they do not meet at all, and even if they wanted to, there is usually little opportunity beyond serendipity. Our preliminary results indicate that the majority of residents surveyed believe, just like Eric above, that chances are good that there *are* people in their neighbourhood who share their interests or are at least compatible at the personality level with whom they do not normally interact on a daily basis. For those who would like to find out about them and who still believe in good neighbourhood relations, the question remains: What can be done to avoid relying on good fortune and fate? How can those who want to, coax luck?

A step towards a more strategic approach to develop urban neighbourhoods encompass online community networks (Schuler, 1996). Community networks are integrated online systems designed for residential communities that have so far usually comprised of communication tools such as mailing lists, discussion boards and newsletters. Ideally, community networks allow residents to communicate and interact with other users and take advantage of the proximity to other residents in the neighbourhood. Thus, these systems have the potential to build a bridge between virtual public spaces and physical public places and foster network social capital and neighbourhood identity.

## **Community Networks in Urban Neighbourhoods**

Arnold states that “for the ordinary citizen, social interaction is the ‘killer application’ of the Internet” (2003, p. 83). This development has sparked an increased interest amongst researchers from a range of disciplines to investigate online communication and online communities (Preece, 2000). Yet, the majority of the work undertaken so far in this research field focuses on globally dispersed online (virtual) communities and not on the use of information and communication technology for communities of place (Papadakis, 2004).

There is a small but growing body of literature that reports on the use of information and communication technology for community development in place-based contexts – mostly within the emerging discipline that Gurstein terms ‘community informatics’ (2001; 2000). However, most of these accounts investigate communities that are in one way or another deprived (e.g., tele-centres or community access centres in rural and remote locations; and ICT for development and poverty reduction in developing countries). The transferability of these studies to urban settings is questionable. Urban dwellers may think of themselves as being quite ‘well-off’ and may lack common disadvantages such as low income or unemployment. Such instances of deprivation could contribute to shared agony which may ultimately help to establish a collective need for change (Foth, 2004b) and thus a reason to make use of technology for action and change. In its absence however, alternative motivations to form neighbourhood community need to be found.

Today, the value of door-to-door and place-to-place relationships in urban neighbourhoods seems to be on the decline. Researchers and practitioners endeavour to counter this trend through ‘community networking’, that is, the application of Internet- and web-based tools in residential environments to introduce and sustain local communication and interaction among neighbours (Day, 2002). Although the term is sometimes used broadly in other contexts of community development and community informatics, the focus in this paper is on urban neighbourhoods and on urban informatics (Ellison, Burrows, & Parker, 2007; Foth, 2008).

A residential community comprises people who live or stay in a geographically demarcated area. Such communities are sometimes also referred to as local communities, physically or geographically based communities, or communities of place. Apart from the fact that members of a residential community share the same location or address, they are not necessarily bound by any other common characteristic such as interest, age group, or occupation. As such, residential communities are not ‘communities’ or ‘neighbourhoods’ a priori. An apartment complex might consist of residents who do not know each other.

A range of research projects have been undertaken to examine whether online community networks can facilitate the process of establishing neighbourhood identity. These projects set out to design and implement online community networks for both large and small residential sites with various aims and with varying degrees of success (Arnold, Gibbs, & Wright, 2003; Carroll & Rosson, 2003; Cahill & Kavanaugh, 2000; De Cindio, Gentile, Grew, & Redolfi, 2003; Hampton & Wellman, 2003; Meredyth, Ewing, & Thomas, 2004; Pinkett, 2003).

Reaching a critical mass of users is considered to be one of the key criteria of success (Arnold et al., 2003; Butler, 2001; Patterson & Kavanaugh, 2001) and has been reported as one of the most common stumbling blocks: “If you build it, they will not necessarily come” (Maloney-Krichmar, Abras, & Preece, 2002, p. 19). This statement seems to be common sense; nonetheless it provides the opportunity for a deeper analysis of the reasons and motivations for urban residents to communicate, interact and get together with other residents and to actively participate in an urban neighbourhood network.

Dunbar (1996) suggests that the size of human social networks is limited for biological and sociological reasons to a value of around 150 nodes. Barabási (2003) and Watts (2003) provide a more far-reaching overview of recent advances in network theory and their impact on business, science and everyday life. Some ideas are crucial in understanding community networks: They usually increase or decrease in size, that is, social network research and systems design need to find ways to capture their dynamics. Their structure is not random or chaotic, but follow preferential attachment (‘rich get richer’) and fitness (‘fit get richer’). In the context of communities of place, Jankowski and his colleagues support this thesis with empirical research by pointing out that “those geographic communities already rich in social capital may become richer thanks to community networks, and those communities poor in social capital may remain poor” (Jankowski, Van Selm, & Hollander, 2001, p. 113). Hampton & Wellman support this notion by stating that, “connectivity seems to go to the connected: greater social benefit from the Internet accrues to those already well situated socially” (2003, p. 283). Then the next questions are, what constitutes ‘richness’ and ‘fitness’ in urban social settings, how do

residents get 'rich' (and become a 'hub' in their social network) and how can community networks facilitate 'enrichment' in a fair and ethical manner?

The reasons and motivations for participation in dispersed online (virtual) communities provide further insight into the answers to these questions. A person suffering from cancer might prefer the expertise, empathy and perhaps anonymity available in an international online community of cancer patients. Philatelists will find more like-minded people in an appropriate virtual community of interest such as a newsgroup or discussion board which is open to any Internet user, and which is not restricted to the residents of just one apartment complex or one suburb. The impossibility or impracticability of a face-to-face exchange in a dispersed online community does usually not impact negatively upon the value participants derive from such online interactions. The large number of active online communities tells its own tale.

The core characteristic of such dispersed online communities is their collective nature, that is, they accumulate participants who share a common interest, profession or support need into an entity which acts as a collective group with a shared purpose. The tools that are used to support online communities, including mailing lists, newsletters, discussion boards, etc., are closer designed towards a many-to-many broadcast approach instead of a peer-to-peer networking approach. They assume a pre-existing motivation to participate in and use the virtual space. In the case of shared interest, profession or support need, that may be the case. However, in the case of residents of urban neighbourhoods the only shared attribute is place and collocation. Apart from occasions where an item of discussion or a topic of interest directly relates to the shared place that residents co-inhabit, most interaction is located *within* place but not necessarily *about* place. Thus, place and proximity are insufficient attributes to attract residents to a community network and to sustain it. Furthermore, a re-appropriation of the tools used to support online (virtual) communities in the context of urban neighbourhood networks opens up further issues, because a community of place is inherently different from a dispersed community of interest. As well, connectivity per se does not ensure community – and proximity does not ensure neighbourliness.

The unique selling proposition that could give online community networks for urban neighbourhoods a competitive advantage over dispersed online communities is proximity. Community networks allow residents to interact online and to take and continue online interaction offline, in real life and face-to-face with other residents who live in the same location. As such, they can be an effective tool for local community engagement and activism if the community faces a shared problem or a common 'enemy' that provides the required motivation for residents to come together. Hampton (2003) describes the experience with residents in Netville who faced the prospect of losing broadband Internet access which had previously been provided to them free of charge. The issue and the presence of a common 'enemy', that is, the Internet Service Provider, unified residents in community activism to advocate for a continuation of the service, and the traffic in the online community network (in the form of an electronic mailing list) increased significantly. The unifying vigour of a common problem or issue can (temporarily) transform a certain number of residents into a residential collective and thus sustain an online community network (cf. Foth & Brereton, 2004).

In the absence of a common enemy, a shared purpose or a pre-existing village-like atmosphere, are there other reasons and motivations for social encounters to occur and for the formation of residential networks in urban neighbourhoods? Examining existing urban communities may help to answer this question. Watters (2003) describes the emergence of clusters of under 35 year old urban dwellers mostly in America but also in other parts of the world as 'urban tribes'. They represent a social network, a swarming group of friends who live in the same city and who are all connected with each other through strong and weak ties. The interaction between members of urban tribes is facilitated through the use of mobile phones, email and face-to-face gatherings. Watters does not mention the use of neighbourhood or similar ICT-supported networks, but his account of the behaviour of urban tribes allows to imagine a new generation of purpose-built interactive community networks for residents in urban neighbourhoods.

## **The Urban Tribe Incubator**

The previous section discussed the conditions under which residents might ultimately engage in neighbourhood community networks and thus talk to people within their vicinity. For these conditions to emerge, competitive tools need to be designed that allow residents to find out who is living around them and that facilitate local communication and interaction that so far relied on coincidence and serendipity. However, conventional community networks do not necessarily address these needs. They are very delicate, organic entities. They thrive only in favourable circumstances (e.g., similar demographic and professional orientation), with special nurturing (e.g., free Internet access) (Hampton & Wellman, 2003; Kavanaugh, Reese, Carroll, & Rosson, 2003), and chances are high that else, they may fail (Arnold et al., 2003).

The findings of these sociological studies provide essential insights for a new design that can guide the successful development of interactive systems and devices to stimulate local interaction and animate urban neighbourhoods. A prototype system of an 'urban tribe incubator' is currently being developed and tested in three urban residential sites in Australia (Foth, 2004a). Action research (Hearn & Foth, 2005; Hearn, Tacchi, Foth, & Lennie, 2008, forthcoming) and participatory design (Foth & Axup, 2006; Greenwood, 2002) play crucial roles in iteratively constructing and testing a successful prototype. The participation of residents in the design and development is essential to integrate the range of communication channels they use and to allow residents to take social ownership of the system.

The previous discussion of the factors influencing systems that support social networks in urban neighbourhoods gives rise to a set of design considerations which are being integrated into the design of the urban tribe incubator prototype. These are now discussed in turn.

### **Size, Growth, and Critical Mass**

Popular services and functions in conventional community networking systems include electronic newsletters, mailing lists and discussion boards. In order to keep these systems interesting and appealing, content needs to be generated by either a systems administrator or delegate but ideally by the community of users itself. Thus a

critical mass of users is required to maintain an ongoing supply of discussion board postings and reponses, mailing submissions and newsletter contributions. It requires residents to invest a reasonable amount of time and effort to collectively sustain the system's viability.

The urban tribe incubator may include such collective, broadcast-style, many-to-many functions, but the core will be a residents directory which does not require maintenance on a regular basis unless details have changed and need to be updated. A resident's personal profile may comprise information about skills, trade, interests, hobbies and contact details. The profile becomes the virtual representation of a potential node that invites other residents to link to and from. The system does not require users to use the directory on a regular basis to interact with all other users. Rather, the system allows users to opt-in and opt-out as they please and as a need arises by facilitating personalised networking, that is, to voluntarily initiate contact and build social ties with people of their choice. Thus, the directory becomes the catalyst for personalised 'peer-to-peer' social networks to form.

The size and growth of the directory itself is in no linear relation to the size and growth of an individual resident's social network. The system acknowledges different levels of social 'richness' and 'fitness' and thus the point of saturation remains a personal preference. If an individual's personal limit of social saturation is reached, they can opt-out. In conventional community networks for example, users can usually not control how many people will respond to their posting on a discussion board: It may be none, or it may set off an avalanche of responses. In an instant messenger application however, users remain in control of the social network they engage with, their private 'buddy list'.

### Diversity, Individualism, and Choice

The urban tribe incubator is not designed to host an online community of a particular interest or support need, but rather allows for the diversity of individual residents with different interests and support needs to find each other and to form smaller social clusters. The system presents residents with choice in relation to the number and characteristics of communication partners and modes of interaction. It provides easy and convenient ways for residents to identify birds of a feather, that is, to find like-minded people with common interests or support needs.

The system raises awareness amongst residents of who is living around them in order to facilitate peer-to-peer connections. The resident directory that links to individual profiles allows residents to choose what personal information they publish online or whether to keep certain information private or only available upon request. The goal of a resident directory is not to facilitate residents initiating virtual contact first (although it can be used in this way), but rather to simplify the process of strengthening serendipitous social encounters that happen while 'walking the dog'. Without an urban tribe incubator, such informal contacts that have the potential to develop into rich interaction, may remain superficial and transitory.

The system does not require residents to keep communication within the system, but allows them to move it to other synchronous or asynchronous communication platforms and devices. Having access to an online directory, a resident is able to

maintain contact with a new acquaintance and to integrate this contact into their usage of existing personal peer-to-peer communication devices that they use already such as instant messengers, email, SMS, and online chat.

## Privacy and Social Control

To safeguard privacy, residents have control over their personal information and the scope of their online engagement. Enhanced local sociability is welcomed by most residents but must not come at the cost of losing security and control of the voluntary and selective nature of one's social networks. Our preliminary results are encouraging insofar as residents seem to be trusting their (yet personally mostly unknown) neighbours with personal details such as name, phone numbers, email addresses, photo, occupation, interests, hobbies, etc. In our survey, the majority of residents has indicated that they are willing to share this kind of personal information online with other residents in the building.

Nevertheless, issues of privacy and social control have to be translated into appropriate terms and conditions that govern the usage of the system and the interaction among residents of the building. It is imperative to ensure that residents have the chance to opt-in and opt-out at any time without missing out on any essential information. Hence, it is worthwhile to consider supplementing official online communication channels with public announcements on neighbourhood pinboards in prominent places within the building (e.g., carpark entry, reception or entrance area, manager's office door, elevators) to provide alternative ways of accessing community information.

## Network of Networks, Identity and Sense of Belonging

The urban tribe incubator may resemble more the *networked* nature of, for example, an online dating site than the *collective* nature of, for example, an online discussion board. What may emerge from this process of personalised networking (or 'online dating') is a complex web of social networks that span the anonymous void of the building complex, a web of 'urban tribes' (Watters, 2003). Social 'hubs' will continue to play a crucial role as their bridging links (Kavanaugh *et al.*, 2003) connect different social networks and establish connectivity in the sense of community and solidarity. Drawing on viral marketing strategies (Godin, 2001; Goldsmith, 2002), the incubator allows individuals to cross-invite and introduce peers to the other networks they participate in – both inside and outside the neighbourhood. The feeling of a neighbourhood identity and a sense of belonging can only emerge if bridging social links between members of different urban tribes contribute to the formation of a 'mesh-work' of urban tribes that is "networked to the 'edge of chaos'" (Gilchrist, 2000, 2004). In this context, identity and a sense of belonging are not derived from the collective feeling of being co-located in the same place but from the feeling of being connected to a group of friends who are part of a greater group of peers living close by.

## Conclusion and Outlook

The design considerations presented here will guide the development of the core prototype system. We then envision to extend this core with more sophisticated features that for example, allow users to produce and exchange creative content (photos, audio, video, digital storytelling) (Klaebe, Foth, Burgess, & Bilandzic, 2007) and simplify the tasks of organising and managing social gatherings such as calendaring, inviting, RSVPs, synchronising with SMS and email, etc. As well, in this environment, the social aspects of the urban tribe incubator can be combined with managerial features that allow apartment owners to interact with the body corporate and tenants with the on-site management. In this role, the system can manage rates and rent payments, entry notices, mailings and notifications, personalised information on contractors and house rules, thus adding further value to the system and encouraging uptake and usage. Cross-platform compatibility is key. As such, the urban tribe incubator is anticipated to be a technical framework that can be accessed not only on the home or office computer, but also on mobile and other devices.

The future holds interesting outlooks for platform developments. New urbanism, urban renewal and the move towards more and more compact cities create opportunities to re-think the communicative paradigm of apartment complexes and vertical real estate as well as the sociological qualities of the office environment most social software is accessed in. The kitchen is associated with the preparation of food which is an essential part of one's social life, as opposed to the office that is the centre of professional life. Hence, modern residential architecture often links the kitchen area with the living room to form one seamless space that can be re-purposed for entertainment and leisure. In this context, the much scorned Internet fridge might see a revival as an integrated local communication hub that combines the functionality of a simple touchscreen display interface, a ubiquitous instant messenger and a synchronised resident buddy list with location-aware services and groupware functionality. The rationale for choosing the fridge is not based on the inherent cooling functionality of the fridge itself, but its position and prominence within the environment of many urban homes.

This chapter hopes to contribute towards substantiating a new *Zeitgeist* of designing residential community networks for urban neighbourhoods which is characterised by combining current understandings of social networks inherent in Wellman's theory of networked individualism with the affordances of ubiquitous communication devices and applications for personalised place-based networking such as the Internet, instant messengers, and mobile phones. Putnam argues that, "the Internet will not *automatically* offset the decline in more conventional forms of social capital, but that it has that potential. In fact, it is hard to imagine solving our contemporary civic dilemmas without computer-mediated communication" (Putnam, 2000, p. 180). If online community networks for residential communities are designed to include features that cater for both collective as well as network interaction, they have the potential to contribute to the creation of neighbourhood identity and to increase network capital and social capital in urban environments (cf. Florida, 2003; Huysman & Wulf, 2004; Quan-Haase, Wellman, Witte, & Hampton, 2002). Thus, they may prove to be a milestone in the quest to animate urban neighbourhoods, to revive forms of civic engagement in society, and to enact global connectivity for local action in

order to move from the vision of the ‘global village’ to a new understanding of the ‘urban village’.

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## **Biography**

Marcus Foth is a Senior Research Fellow at the Institute for Creative Industries and Innovation, Queensland University of Technology (QUT), Brisbane, Australia. He received a BCompSc(Hon) from Furtwangen University, Germany, a BMultimedia from Griffith University, Australia and an MA and PhD in digital media and urban sociology from QUT. Dr Foth is the recipient of an Australian Postdoctoral Fellowship supported under the Australian Research Council’s Discovery funding scheme. He was a 2007 Visiting Fellow at the Oxford Internet Institute, University of Oxford, UK. Employing participatory design and action research, he is working on cross-disciplinary research and development at the intersection of people, place and technology with a focus on urban informatics, locative media and mobile applications. Dr Foth has published over forty articles in journals, edited books, and conference proceedings in the last four years. He is a member of the Australian Computer Society and the Executive Committee of the Association of Internet Researchers.

## **Key Terms**

**Communicative ecology**, as defined by Hearn & Foth (2007), comprises a technological layer which consists of the devices and connecting media that enable communication and interaction. A social layer which consists of people and social modes of organising those people – which might include, for example, everything from friendship groups to more formal community organisations, as well as companies or legal entities. And a discursive layer which is the content of communication – that is, the ideas or themes that constitute the known social universe that the ecology operates in.

**Master-planned communities** are urban developments guided by a central planning document which outlines strategic design principles and specifications pertaining to road infrastructure, building design, zoning, technology and social and community

facilities. They are usually built on vacant land and thus in contrast with the type of ad-hoc organic growth of existing city settlements.

**Collective interaction** is characterised by a shared goal or common purpose, a focus on the community rather than the individual. The interaction is more public and formal than private and informal, and resembles many-to-many broadcasts. The mode of interaction is often asynchronous, permanent and hierarchically structured. Technology that supports collective interaction includes online discussion boards and mailing list.

**Networked interaction** is characterised by an interest in personal social networking and a focus on individual relationships. The interaction is more private and informal than public and formal, and resembles a peer-to-peer switchboard. The mode of interaction is often synchronous, transitory and appears chaotic from the outside. Technology that supports networked interaction includes instant messengers, email and SMS.

**Digital storytelling** refers to a specific tradition based around the production of digital stories in intensive collaborative workshops. The outcome is a short autobiographical narrative recorded as a voiceover, combined with photographic images (often sourced from the participants' own photo albums) and sometimes music (or other sonic ambience). These textual elements are combined to produce a 2-3 minute video. This form of digital storytelling originated in the late 1990s at the University of California at Berkeley's Centre for Digital Storytelling ([www.storycenter.org](http://www.storycenter.org)), headed by Dana Atchley and Joe Lambert.

**Local Knowledge:** Knowledge, or even knowing, is the justified belief that something is true. Knowledge is thus different from opinion. Local knowledge refers to facts and information acquired by a person which are relevant to a specific locale or have been elicited from a place-based context. It can also include specific skills or experiences made in a particular location. In this regard, local knowledge can be tacitly held, that is, knowledge we draw upon to perform and act but we may not be able to easily and explicitly articulate it: "We can know things, and important things, that we cannot tell" (Polanyi, 1966).

**Action Research:** A research approach which is operationalised by constant cycles of planning, acting, observing and reflecting, which encourages the participation of local subjects as active agents in the research process, and which works hand in hand with people-centred research methodologies.

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