Networked Individualism of Urban Residents:

Discovering the Communicative Ecology in Inner-City

Apartment Buildings

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Abstract

Certain patterns of interaction between people point to networks as an adequate conceptual model to characterise some aspects of social relationships mediated or facilitated by information and communication technology. Wellman proposes a shift from groups to networks and describes the ambivalent nature inherent in an ego-centric yet still well-connected portfolio of sociability with the term 'networked individualism'. In this paper we use qualitative data from an action research study of social networks of residents in three inner-city apartment buildings in Australia to provide empirical grounding for the theoretical concept of networked individualism. However, this model focuses on network interaction rather than collective interaction. We propose 'communicative ecology' as a concept which integrates the three dimensions of "online and offline", "global and local" as well as "collective and networked". We present our research on three layers of interpretation (technical, social and discursive) to deliver a rich description of the communicative ecology we found, that is, the way residents negotiate membership, trust, privacy, reciprocity, permeability and social roles in person-to-person mediated and direct relationships. We find that residents seamlessly traverse between online and offline communication; local communication and interaction maintains a more prominent position than global or geographically dispersed communication; and residents follow a dual approach which allows them to switch between collective and networked interaction depending on purpose and context.

Introduction

Mobile phones and internet-based communication technology such as email, instant messengers and online chat are widespread in developed countries. A number of studies provide evidence that they have become an integral part of the everyday life of many people (Boase *et al.*, 2006; Fallows, 2004; Wellman & Haythornthwaite, 2002). The ability to communicate selectively, mediated, relayed and over distance impacts on the way social relationships are constructed and maintained. At first, pessimistic views feared a growing alienation from conventional means of face-to-face interaction, whereas from utopian perspectives the internet was seen as a place-independent electronic agora capable of superseding any sort of physical meeting or work place.

This debate also relied on a simplistic dichotomy between online and offline modes of communication which were seen as distinct and unrelated. However, more recent studies show that computer mediated communication and mobile communication are just two forms of communication amongst many (Hampton, 2004; Rice, 2002), and that social relationships that originate from online interaction are taken into and continued in the offline world and vice versa. Castells (2001) speaks of 'portfolios of sociability' to describe the interwoven networks of kinship, friends and peers which people create. Mesch & Levanon (2003) find that these social circles which individuals generate and maintain with the help of information and communication technology (ICT) transcend from online to offline and from offline to online seamlessly. These movements introduce new qualities to the concept of 'community'. Wellman (2001) describes how social relationships used to be primarily from door to door and from place to place before the emergence of ICT. Calling someone's home phone connects the dialler to a place, and a typical conversation might start to reassure the identity of the person answering the phone. However, when calling a mobile phone, the conversation typically starts by identifying the person's location, since the mobile phone is a personal communication device and the mobile phone number uniquely identifies the person answering, but not his or her location. In this context, Wellman speaks of person-to-person relationships and – facilitated through personalised ring tones, multiple email accounts, and instant messaging identities – role-to-role relationships.

Individuals take control of their personal portfolio of sociability and add, grow, connect, disconnect, merge and split with other nodes and social clusters as they see fit. The behaviour that governs these social relationships is driven by the individuals themselves and their personal needs and preferences. This constitutes a shift from the traditional sense of community as collective group behaviour or *Gemeinschaft* (Tönnies, 1887). In this interpretation a person's locale pre-determines prospective communication partners. People talk to their neighbours about what is happening in their local street or suburb, as well as about social matters such as family and friends. However, the next door neighbour may not

be as interesting or as socially compatible as the friend who lives a short car ride away. Today, ICT and modern forms of transportation mean that individuals are not constrained to satisfy social communication needs with people in their immediate surroundings. "Physical closeness does not mean social closeness" (Wellman, 2001, p. 234), but social relationships do benefit from physical proximity, as the interaction with the majority of members in an individual's portfolio of sociability tends to be face-to-face. The networking and linking practices enabled by new media and ICT are not likely to be focused on identifications based solely on collocation and *about* place but on the socio-cultural meanings and usages residents derive from their interaction situated *within* place.

The point of departure for this study both in theoretical as well as practical terms is a new conceptualisation of networks. Scholars such as Wellman, Castells and others have pointed to the notion of networks, and social networks in particular, to explain new forms of social formations observed in the Network Society. In their research data they found patterns of interaction between people that point to networks as an adequate conceptual model to characterise current social relationships mediated or facilitated by ICT. Wellman (2001; 2002) proposes a shift of community from groups to networks and describes the ambivalent nature inherent in an ego-centric yet still well-connected portfolio of sociability with the term 'networked individualism'.

The present study focuses on online and offline communication and social interaction in inner-city apartment buildings. The study aims to propose new ways to conceptualise the roles of social networks of residents in order to better inform the design of new technology that helps facilitate communication in urban neighbourhoods (cf. Foth, 2006a). In this paper we use qualitative data from an action research study of social networks of residents in three inner-city apartment buildings to provide empirical grounding for the theoretical concept of networked individualism. However, social networks are not a new social phenomenon. Social relationships in community structures have always been a combination of collective interaction and network interaction. Wellman points out that ICT and new media provide a new dimension to the act of social networking, but he also acknowledges that "reality rarely contains pure ideal types: Most people's lives are mixtures of groups and networks" (Wellman, 2002, p. 20).

In response to this disclaimer, we invoke the concept of 'communicative ecology' to integrate the three dimensions of "online and offline", "global and local" and "collective and networked". This more holistic model helps us better understand the dynamic inter-relationships between different communication technologies and between different social dimensions which we found in the interactions of the residents we studied. After first outlining the research design and action research interventions over time, we present and discuss our findings using the communicative ecology model on three layers of interpretation: the technology, the social and

the discursive (or content) layer. We conclude by outlining how these findings pose new research questions for future studies.

Research Design and Progression

The research design combines a case study of an inner-city residential apartment building in a major city in Australia with a comparative study of another two apartment buildings in the same city. In addition to the action research interventions in the first apartment building, qualitative data was collected through surveys, focus groups, participant observation and interviews at all three sites. This section will discuss the methodological framework of the study, the characteristics of the research sites under investigation, as well as the interventions and actions undertaken in each action research cycle at the first apartment complex.

Methodological Framework

Action research allows for a direct participation of residents in the research process as co-investigators who engage in cycles of inquiry, action and reflection (Reason & Bradbury, 2001). This enables the generation of a rich understanding of the meaning that urban residents derive from their use of new media and ICT (Hearn & Foth, 2005). It also allows the lead researchers to give back to the community (cf. Reason, 1998) by engaging in a process of active community development through the use of ICT which benefits individual residents and their social networks. The action research approach adopted for this study was directly informed by the concept of networked individualism – departing from a collectivist approach that would engage with the entire community in a homogeneous manner. Instead, it engages with selected individual residents and their immediate social clusters in a peer-to-peer mode of exchange (see Figure 1). These study participants form a network of inquiry that elicit research data and feed it back into the ongoing action research cycles of intervention and reflection. We call this variation of action research 'Network Action Research' (Foth, 2006b).

Rents? Repairs? Noise? Atmosphere?

Study groups? Exams? Assignments?

Orientation? Culture shock?

Managers

Engineers

Singaporeans

Security? Updates? Online chats?

Theme for the next movie night?

Movie Buffs

IT Experts

Game scores? Network speed?

Action Research Meta-Network

When's the next game? Invite others to join...
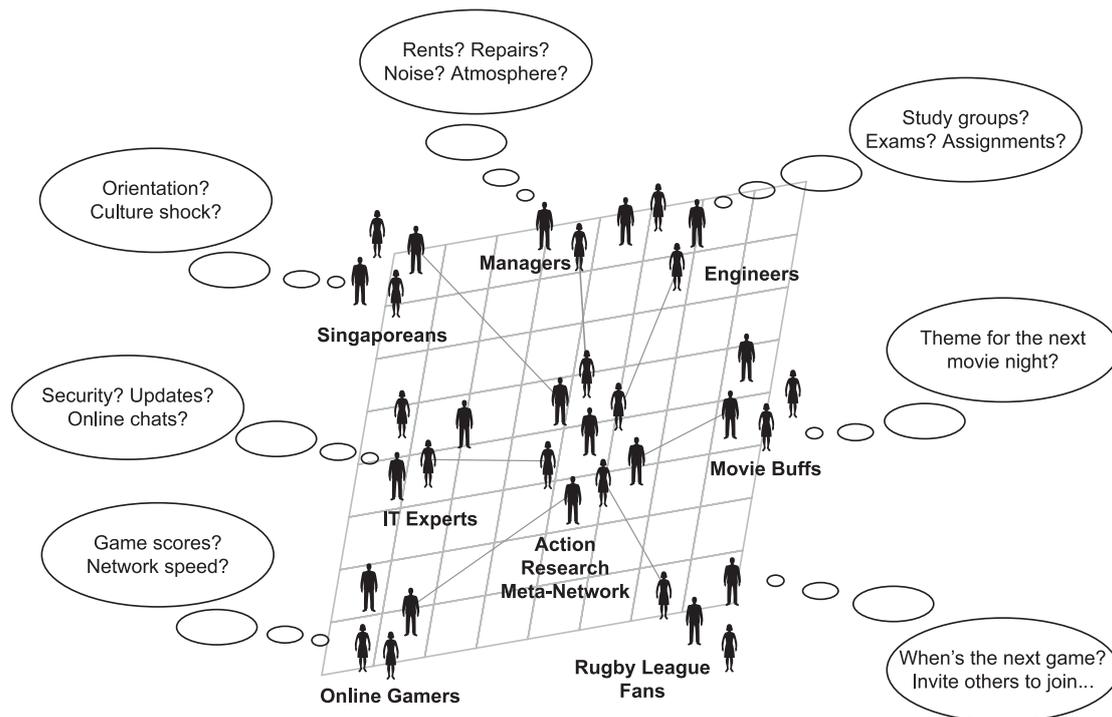
Online Gamers

Rugby League Fans

Figure 1: Network Action Research. Source: Foth (2006b)

After an initial phase of immersion with the community of place, the study seeks to integrate systems design with community development in each action research cycle. Participatory design principles (Botero Cabrera *et al.*, 2002; Greenbaum & Kyng, 1991; Schuler & Namioka, 1993) are utilised to create the network, to provide access to information and to ensure usability within the context of human-computer interaction. Simultaneously, sociocultural animation (Foth, 2006c) is employed to populate the network, make effective use of information (Gurstein, 2003) and to improve sociability within the context of social ties and human networks (Preece, 2000). This is followed by further interventions to establish a neighbourhood culture that strengthens the community network, so "it becomes an institutional actor with relationships to other community institutions, as well as to individuals and their groups" (Carroll & Rosson, 2003). This process is further described by Foth (2004).

Research Sites

The research was based in three different inner-city residential apartment complexes in metropolitan Australia. To protect the privacy of residents, the sites will be referred to as 'Alpha', 'Melba' and 'Sigma'. Research on Alpha started in late 2002. Melba and Sigma have been added to the case study at the end of 2004 to control for certain demographic factors and to enable a more comparative analysis. Opened in 2000, Alpha is an apartment complex for international students who are about 17 to 24 years of age and study at nearby tertiary institutions. They come from a variety of national and cultural backgrounds. The majority of

tenants only stay short-term, that is, for one or two semesters of study. About a fifth of tenants come to Australia to study a full degree program which usually lasts three to four years. Alpha contains 94 one, two and three bedroom units with a total of approximately 160 tenants.

Melba was built in the mid-90s and is the home of mostly working singles and couples in their twenties and thirties. It contains 39 two and three bedroom units with a total of approximately 90 residents, mostly tenants and some owner-occupiers. Length of residence at Melba is medium to long-term. Sigma is the largest site which was completed in the early 80s. It consist of three high-rise buildings, a low-rise two story building and 48 townhouses. There are 156 apartments and approximately 300 residents in total with the majority being owner-occupiers and some tenants. Residents are mostly couples and families in their forties and fifties working in diverse occupations with some retirees. Length of residence at Sigma is usually long-term. Unlike Alpha where every tenant is an international student, there is no pre-existing underlying common link at Melba or Sigma other than living in the one complex. One of the authors was a resident at Alpha in 2000 and 2001 and at Melba in 2004 and 2005 and was thus able to experience the dynamics of those buildings as a participant observer. Melba and Sigma have been added to the study in order to generate more universal results that are not specific to the demographics of a student cohort only.

Research Progression, Interventions and Actions

The main site of study was Alpha. Following the Network Action Research approach, the project engaged residents and their related networks in the research process, including:

- Two permanent on-site managers and one support staff;

- One IT consultant;

- Residents volunteering to support the IT network and web site design; and,

- Residents volunteering to help organise welcome barbecues, movie nights and other social events.

Research commenced early 2003 with an initial objective to build a community website that would facilitate social interaction between residents at Alpha. Figure 2 illustrates the research progression.
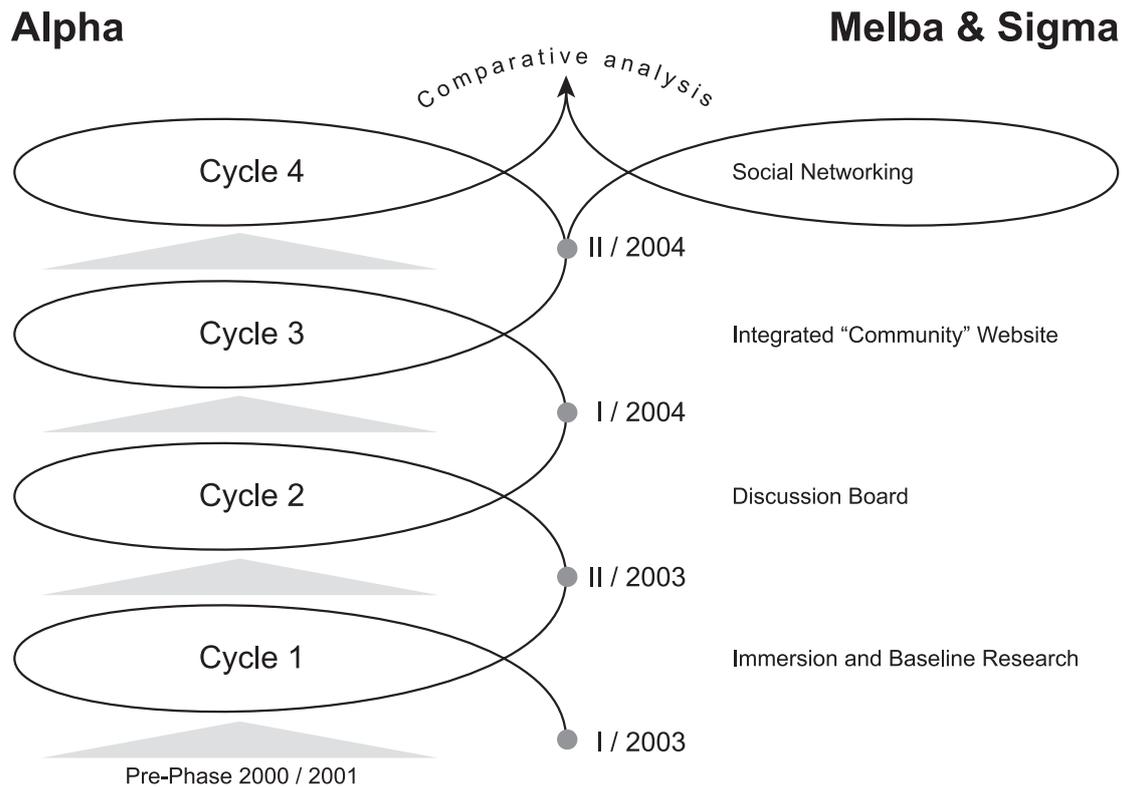
Alpha   **Melba & Sigma**

Comparative analysis

Cycle 4   Social Networking

II / 2004

Cycle 3   Integrated "Community" Website

I / 2004

Cycle 2   Discussion Board

II / 2003

Cycle 1   Immersion and Baseline Research

I / 2003

Pre-Phase 2000 / 2001

Figure 2: Action research cycles

Cycle 1 consisted of an initial phase of start-up meetings with management, immersion with the residential community and baseline research to gather demographic data through an introductory survey in 2003. The survey was made available online and in hardcopy to all 160 residents at Alpha with a response rate of 20%. It identified common themes of concern within the community which were followed up with semi-structured interviews conducted with 15 residents. This was followed by Cycle 2 which initiated the system design process. In two focus groups of residents who were selected using maximum variation sampling (Patton, 1990), a couple of themes of common interest were identified such as security, travel, IT, study, and leisure activities. A discussion board (*phpBB*) was implemented to allow residents to talk about these common interests, and a movie night was held in the common room to launch the site. However, the site never succeeded in attracting a critical mass of users to keep the discussion in all theme-based forums going.

In Cycle 3, a new cohort of residents was welcomed by existing tenants with a barbecue night. This provided an opportunity for residents to meet and network informally. A more detailed survey was undertaken to gauge the various interests of residents and to determine the preferred way of communication. The results were used to inform a resident-led development of an integrated community website (*postnuke*) which featured not only a discussion board but also a file sharing area, member directory and news page. Shortly after

the launch of the new site, more than 50% of residents had registered for an account. However, the discussion was quickly dominated by various place-based issues, mostly IT-related, and it seemed that the most computer literate residents started to 'hijack' the site by transforming it into a community of interest. It was not possible to attract a critical mass of active users for either the other forums or for the other functions the site had to offer.

In Cycle 4, Melba and Sigma were added to the research project as representations of 'non-student' types of accommodation and to enable a comparative analysis of findings beyond the student cohort. This involved the distribution of a revised survey questionnaire – available both online and in hardcopy – to all three sites as well as an in-depth engagement via focus groups and interviews with research participants across the sites to try to understand the motivation for place-based interaction and neighbourhood interaction. In total 131 surveys were returned and analysed (response rates: Alpha 16%, Melba 33%, Sigma 15%), six focus groups were held and seven follow-up interviews were conducted.

Reflections on the Anatomy of Networked Individualism of Urban Residents

The point of departure for our analysis was a number of paradoxical results which emerged during the action research at Alpha. For example, residents were asked about the way they would like to interact with each other, and a community website was seen as a preferred way of communication. As well, residents identified interests they share and common issues they were concerned about which led to be the focal point of the online discussion board. Although the implementation closely followed the suggestions of residents and was driven by residents themselves, the site failed to meet its objectives. The second cycle of action research at Alpha again led to an unpredicted defection from the collective public community objectives. On reflection however this result is not necessarily at odds with the concept of networked individualism insofar as we initially overlooked the mode of communication residents preferred for social interaction. We tried to meet the demand for networked communication with a tool that facilitates collective communication.

Nevertheless we still needed a concept that could explain some of the emergent collective behaviour we observed, for example, the coalition of IT oriented participants in the second phase. We invoked the concept of a 'communicative ecology' to theorise these findings – defining this as a milieu of agents who are connected in various ways by various media making exchanges in various ways. Tacchi, Slater, & Hearn (2003, p. 17) suggest communicative ecologies are the "processes that involve a mix of media, organised in specific ways, through which people connect with their social networks". An ecology operates as a 'web of life' and a web is a network; thus, the communicative ecology framework opens up

the possibility of network analyses of relationships between agents in the ecology. Broadly, it refers to the context in which the communication process occurs. Such an ecology can thus be thought of as comprising a number of mediated and unmediated forms of communication. In this context, use of the term is closely aligned to research in the field of media ecology, and is thus informed by the work of Nystrom (1973) and Altheide (1995). We conceive of a communicative ecology as having three layers. 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 informal social networks to more formal community associations, as well as commercial or legal entities such as body corporates. In addition we can think of a *discursive* layer which is the content, that is, the ideas or themes that constitute the conversations and narratives of the ecology.

Technology Layer

Within the conceptual framework of a communicative ecology, the technology layer provides the foundation for mediated communication to occur in addition to conventional face-to-face interaction. The main devices and applications on the technology layer used by residents at Alpha, Melba and Sigma for social networking include land line phones and mobile phones, especially short messaging service (SMS), as well as email and instant messengers, and to a lesser degree discussion boards and web-based online chats. Wellman *et al.* (2003) point out that "each person is a switchboard, between ties and networks. People remain connected, but as individuals, rather than being rooted in the home bases of work unit and household. Each person operates a separate personal community network, and switches rapidly among multiple sub-networks."

The devices and applications on the technology layer must be differentiated according to the communication model they facilitate. Some applications, such as discussion boards and public chat rooms, support one-to-many and many-to-many broadcast-style communication, whereas SMS and instant messengers enable one-to-one and peer-to-peer communication that resemble more a network than a homogeneous group and are hence more compatible with the concept of networked individualism. Depending on the purpose and content of the interaction, some tools and applications may be more appropriate than others in achieving the desired outcomes – an effect which we discuss further below in the context of the discursive layer.

The social use of communication applications and devices is fluent. Residents at Alpha start planning their evening while at university by chatting to their friends either face-to-face or via email and instant messengers. Change of plans or venues at short notice while on the move are communicated and confirmed via SMS. The interaction and communication moves seamlessly between virtual and real communication spaces. What remains in a constant state

of flux is the social circle that shows characteristics of a 'swarm' (Satchell, 2003) or 'urban tribe' (Watters, 2003b). This kind of technology is used to keep in touch with friends and peers who live in relative proximity to each other which then usually culminates in face-to-face interaction. The same technology can be used for different purposes and evoke different meanings in different contexts. In the following two sections we discuss the social and discursive aspects of the technology used in the communicative ecology of the apartment buildings under investigation. Various implications for the design of new technologies that support community interaction can be derived from this analysis. These are outside the scope of this paper and discussed elsewhere (Foth, 2006a).

Social Layer

In terms of the social layer, almost by definition, residents distinguish between the social roles of 'neighbours' and 'friends who live in the building'. It is possible for a neighbour to become a friend, and some residents argue that the potential of that transition to occur is one of the advantages of living in an apartment complex. The importance of recognising social roles can be illustrated by the following quotes from residents:

> *Advantage is definitely meeting / running into people there. And having friends*
> *who live in the building. (Resident at Alpha)*

> *I would say I would most likely chat to a familiar face rather than a new one*
> *unless it was obvious they were just moving in. (Resident at Sigma)*

> *I feel people are generally sociable to all residents, they will generally say hi, but*
> *a more lengthy chat usually occurs between those groups that know each other.*
> *(Resident at Melba)*

These quotes give rise to an image of an interwoven meshwork of social networks that live and interact within the apartment building. These social networks consist of members from inside and outside the building. The responses from residents indicate that a member is less likely to be part of someone's social network in their role as 'neighbour' than in their role as 'friend who lives in the building as well'. The potential transition from the one to the other role is welcomed by residents.

> *[Meeting a resident in another capacity other than 'neighbour'] is positive as it*
> *increases the chance for me to know that person a lot better as living in the*
> *same complex would help us to socialise better. (Resident at Alpha)*

Positive, because it gives us an opportunity to meet up again, and someone in

my building that I have a connection to. (Resident at Alpha)

However, the design of apartment buildings and the rushed lifestyle in the network society contributes to anonymity and residential isolation which is hindering in approaching new people, especially at Melba and Sigma which are predominantly occupied by working professionals. Some residents prefer to maintain social networks outside the building and keep to themselves at home. It also depends on personal preferences and personality types as the following quotes demonstrate.

I meet my friends a lot and it is usually away from [Alpha] probably [in a nearby

park] or in the city. I don't like socialising at anyone's house even if it is my own

house. (Resident at Alpha)

Mostly everyone tries hard not to talk to each other unless they are constantly

bumping into the same person and it becomes awkward not to talk. I have

managed to become good friends with a [Sigma] resident, just because we were

similar ages, have similar interests and often ended up in the lift together and

started chatting. (Resident at Sigma)

The level of permeability indicates to what extent residents are approachable and open to make new friends and to allow new arrivals to enter their social circle or community. For example, the survey revealed that most residents that participated believe that chances are good that there are other residents who share their interests or are at least compatible at the personality level with whom they do not normally interact on a daily basis. No resident at any of the three case study sites thought this statement to be false, as the following quotes illustrate as well.

I like to have contact with other people as I live on my own. If I wasn't in a

complex I would never get a chance to see anybody. (Resident at Sigma)

I feel the people here are also interested in meeting new people and socializing.

(Resident at Alpha)

It would be nice to know my neighbours. (Resident at Alpha)

> *Advantages: Meeting people I perhaps wouldn't otherwise get to know.*
>
> *(Resident at Melba)*

Although permeability seems to be generally high and there is a positive attitude towards the 'unknown neighbour', it is difficult to find out who is living in the building, who they are and if they are compatible to a degree to grant them access to one's social network. The most common but arguably not the most efficient way of meeting other residents and getting to know them relies on serendipity. Residents meet other residents in the floors, in the elevator, in the car park and while walking the dogs. Selective use of body language assists residents in signalling their willingness to interact or not.

> *Depends on my mood and their body language, if they look friendly such as smile at me and make eye contact... or if they avoid eye contact, you know they don't want to talk, but I am always up to meeting new people. (Resident at Alpha)*
>
> *I say hi to anyone who passes a smile to me. This helps me to make more friends easily. (Resident at Alpha)*

Although social networks are permeable and open to new members, especially in the case of the student apartment building, residents maintain a gatekeeper function and seek to protect their social network from infiltration by intruders. Social networks have their own culture, history and values. It is necessary to evaluate a new addition to the social network during a period of probation in order to allow existing members to get to know the new person and to build trust.

For example, only a few Australian students live at Alpha. At a barbecue event, those few students felt isolated, because not many international students were comfortable enough approaching the native English speakers (see Figure 3). Clusters formed quickly, first on the basis of gender and nationality, later on the basis of study program and interests such as sports and travel (see Figure 4). A resident commented on the permeability and approachability in such group settings by saying: "Depends on the number of them, and again my mood. It is overwhelming at times meeting tons of new people. Though sometimes it is nice. Smaller groups are more approachable."

Figure 3: Australians at Alpha show social permeability by wearing self-made stickers

Figure 4: Welcome barbecue at Alpha

Of particular notice in the context of networked individualism was the fact that one resident organised a second barbecue party for invited flatmates and friends only at the same time the collective welcome barbecue was held. This example provides evidence that some residents – for various reasons – choose not to engage with other residents and prefer to stick to their existing social network. A networked individualist approach allows such decisions to be respected and does not rely on everyone's collective participation in order to be successful.

The residents at Alpha share in common their international student status within the same age group (with a few exceptions). Similar events at Melba and Sigma have not been as successful, because of the demographic differences and the lack of a need to 'make new friends'. As well, interacting and taking advantage of large collective gatherings are a personal choice and some residents prefer to interact with individuals or small groups one-on-one, such as this resident of Sigma who says: "Group meetings are a bit daunting especially when the people who usually attend these things all know each other."

The themed movie nights that were also organised by Alpha residents did not generate as large a turn out as the welcome barbecue. In fact, the attendees were mostly friends and friends of friends of the organisers which turned the intended public / collective event into a

private gathering of residents who already knew each other. This is congruent with the survey results about collective community activities. It asked tenants how interested they are in participating in a range of community activities such as movie nights, barbecues, team sports, social outings, study groups, and buying groceries together. The responses are very evenly spread in that some residents are very interested in certain activities but indifferent about or not interested at all in other activities. No clear majority could be found for any particular activity or group of residents. The survey data indicates that the body of residents at Alpha, which initially appears to be quite coherent, does not share any particular interests or support needs at large. Some like to travel, some like to cook. Some like to study, some like to sun tan. It is thus difficult to animate the residents with collective community building efforts that operate on the basis of common location, occupation and age group.

It also highlights that the social networks that residents maintain are inherently private. Residents value their privacy and respect the privacy of other residents and their social networks. A resident at Sigma says: "I don't mind when other people are in the pool however I respect their privacy if they don't want to have a chat. I am friendly and say hi but generally that is about all it extends to." Another resident at Alpha comments similarly: "I usually wait until the other residents have finished [with the on-site barbecue] because that provides me with the privacy that I need."

Dunbar (1996) argues that the social circle individuals maintain is limited to about 150 nodes. For reasons of size limitation but also for reasons of reciprocity and social compatibility, it is unlikely that residents are interested to get to know and be friends with all other residents in their building. A resident at Alpha says: "I don't want to socialise with my [...] neighbours. I think it comes down to the fact that the buildings are alive with movement – people coming and going with short leases – that trust dissolves." Another resident at Melba puts it simply: "I'm not really interested in meeting others to any great extent."

The importance of privacy is an essential part of networked individualism and contrasts with conventional approaches towards neighbourhood animation that are based on public and collectivist communication approaches.

Discursive Layer

These dynamics extend to the discursive layer illustrated for example via the use of an online discussion board. Some respondents prefer discussions around studies and study support, others dislike this topic and prefer to exchange travel reports, or talk about recent and upcoming social events, or post used items to buy and sell. This explains the difficulties experienced in trying to reach a critical mass of users in Cycles 2 and 3 of the action research study.

In interviews, especially female residents felt uncomfortable contributing to an online discussion board. They prefer to communicate peer-to-peer with selected others in their buddy list using instant messengers which gives them the level of privacy and control they need. A female resident at Alpha says: "As a single female, I think posting personal profile information is a really BAD idea. If someone needs to know something about me... and they for some reason don't feel comfortable in asking me, they should just ask [the managers]." Choice is imperative in networked individualist approaches. Some residents prefer not to interact with other residents at a given time, or through certain communication channels, or not at all. Other residents may interact with others selectively – both in regards to time and channel – if they feel they are able to build a personal relationship that is mutual. A resident at Melba explains: "I mostly turn [my instant messenger] off because you can't get stuff done with having it on. I'd rather go to a pub with friends than have a chat with them online (assuming they live close by and I can do all that)."

Our study shows that the use of new media and ICT that allow urban residents to take control of their social circle competes with conventional approaches that seek to animate community identity in urban neighbourhoods. Community networks use discussion boards and mailing lists which allow every resident to communicate with all other residents. A discussion board that is designed to facilitate such collective many-to-many communication is ideally used in online communities where the motivation for interaction is based on a common interest or shared need. In place-based settings, a discussion about place-based issues that affect all residents may also attract sufficient interest (Foth, 2006a; Hampton, 2003). However, such discussions about place may be transient and insufficient to generate a sustainable community identity once the place-based issue has been resolved. Thus, a discussion board (or similar online applications) may be a worthwhile communication medium to facilitate neighbourhood activism, but it is incompatible with the requirements set forth by networked individualism.

This kind of place-based social interaction requires peer-to-peer modes of communication, but also attention to privacy issues. William Dutton (2004) summarises two key privacy issues faced by conventional online community networks that are based on a collectivist approach.

> *Proximity provides not just a common interest but a common 'interest' in terms of personal self interest. Residents have a shared stake in their personal safety, security, congeniality – avoiding bad experiences in their personal lives. There seems to be a stronger political interest in communicating and getting along that some of the community literature credits. However, this interest faces two counter tendencies: 1. Getting along is in part based on privacy – not invading a neighbor's space, which makes ICTs problematic. 2. The integrity, safety, etc. of*

the neighborhood can depend on keeping others out, not advertising your home

or neighborhood to outsiders. This again makes the Internet problematic. And if

you exclude, you face the problem of a critical mass required to drive most

virtual communities.

However, there is no critical mass required to establish any number of communication streams between pairs of nodes, as is the case with instant messaging and SMS. The total number of buddies listed in an instant messaging application or the number of entries in a mobile phone phonebook is not in relation to the effectiveness of the application but in relation to the social preference of the owner. Our study generated evidence of the naturalistically occurring use of ICT that is evolving towards the networked individualistic end of the spectrum of communication. Our survey results indicate that the majority of residents at Alpha, Melba and Sigma use mobile phones and email (> 90%). Instant messaging is more frequently used by residents at Alpha than by residents at Melba and Sigma, which is related to age differences in the demographics and consistent with previous studies of messaging media (Grinter & Palen, 2002; Lenhart *et al.*, 2001; Schiano *et al.*, 2002). Residents were asked how many people who live in their apartment complex are listed in their mobile phone book, email address book, and instant messenger program. The results show that – apart from the manager whose contact details are widespread – residents have listed only one or two other residents on average in their mobile phone or email address book, and less than one on average in instant messaging applications.

The fact that residents already use ICT for personalised networking but not necessarily with neighbours, as well as their affirmation that chances are good that there are other yet unknown residents who may be socially compatible, support the thesis that community networks need to be designed to allow for peer-to-peer forms of interaction. It is essential that any approach that seeks to support the process of residents finding out about and interacting with each other is designed to take into account the need to provide residents with adequate levels of choice and privacy. In some settings, sophisticated online technologies may not be necessary to accomplish the goal of raising awareness of who is living in the neighbourhood, as this resident at Melba suggests: "Perhaps a flyer or some sort of notification when new residents move in and some details on them... You can live below or above people you never meet."

Furthermore, using the ecology metaphor opened up a number of interesting analytical possibilities which we will investigate in the future. For example it enables us to analyse the nature of the population within each ecology – how the members of this population engage with each other. We can ask what are the rules of engagement. It also enables us to define boundaries of any given ecology, and to examine how the coherence of that boundary and the stability of the ecology is maintained. It opens up the question of the sustainability of an

ecology and in particular gives us pointers to analyse how different members of each ecology survive. It may clarify the requirements and the conditions for sustainability, or the failure and downfall of the ecology.

Understanding these characteristics could be important in understanding how the communicative ecology works and how network characteristics are likely to be manifested in the technology as well as the social structure and the discursive structure. For example, they may describe the technological infrastructure as well as assisting in describing how ideas flow through a social network. They may potentially explain how the communities maintain a stable social discursive structure around several core values with links out to other lesser important concepts.

The ecology metaphor is relational and recursive. For example, we could describe the ecology of a typical urban neighbourhood as comprising the unmediated social network, the mobile telephone mediated network, the email network, the community intranet, the Internet to the world wide web and broadcast and other media. A key question for future research is then, how do these different media ecologies relate to each other? Is it possible to move a message of importance to community through the medium of intranet or must mobile telephones be used? How does one ecology in one of these different domains relate to other domains found? How is the e-mail network affected in terms of the other networks? How could one trace an idea as it travels from the discursive realm, perhaps in the conversation at a coffee shop, into the realm of email? There, it may be circulated via a network consisting of influential hubs. Then, perhaps it is taken up on discussion boards, blogs and other modalities to be fed into existing social structures. Finally, it may be turned into a matter of principle or even law and is then fed back into the community.

Conclusions

Key architectural aspects of the purpose and relevance of inner-city neighbourhoods remain unchanged; for urban dwellers continue to value secure, accessible, green and affordable neighbourhoods that are close to infrastructure and facilities. However, the social quality of 'place' and 'proximity' has changed. While place-based interaction and face-to-face communication remains essential in any part of the social circle of urban residents, the scale of distance that new media, ICT and mobile phones afford has grown beyond the immediate apartment block or street to encompass multiple neighbourhoods and adjacent suburbs. Most neighbours are only given the opportunity to change into friends through serendipitous encounters, and many of these encounters are awkward and often avoided.

Neighbourhood animation that seeks to introduce community development strategies to establish a residential community traditionally followed a collectivist approach. Only recently

has the importance of networks and peer-to-peer communication for community development been recognised (Gilchrist, 2004). Although it can be argued that a more sophisticated animation process than the one enacted in our case study could have led to better results, our findings point in the direction of a different approach – a dual approach.

In a neighbourhood context, such an approach (see Table 1) would work towards collective interaction for discussion *about* place (e.g., community activism) as well as networked interaction for sociability *in* place (e.g., social networking). The first component encompasses anything from body corporate affairs, rent, utilities and management business to repairs, street rejuvenation initiatives and lobbying activity. The motivation behind any issue that relates to the place in which residents are collocated stems from the shared interest in and common purpose of the urban neighbourhood site itself.

	Collective Interaction	**Networked Interaction**
Geographically dispersed	Online communities, e.g. 'Yahoo Groups'	Online social networking, e.g. 'Friendster', "Orkut'
Place based	Collective interaction for discussion *about* place	Networked interaction for sociability *in* place

Table 1: Dual approach towards urban neighbourhood animation

The second component comprises the social aspect in that it seeks to raise awareness of who lives in the neighbourhood, provides opportunities for residents to find out about each other and voluntarily initiate contact with selected residents of choice. For example, it is possible to circulate a private white pages directory with contact details and short profiles to residents and use mobile phone or email contacts to begin to facilitate the development of peer-to-peer social networks. If place-based issues arise, residents can migrate into the domain of a community intranet or discussion board to organise collective meetings and action. At the same time, such events can be opportunities to meet new residents and to migrate back into the domain of the private social network.

The image of the communicative ecology we derived from our study is positioned to embrace the three dimensions of "online and offline", "global and local" and "collective and networked" (see Figure 5). We find that

- residents seamlessly traverse between online and offline communication;

- local communication and interaction maintains a more prominent position than global or geographically dispersed communication; and,

- residents draw on a dual approach which allows them to switch between collective (group) and networked interaction depending on purpose and context.
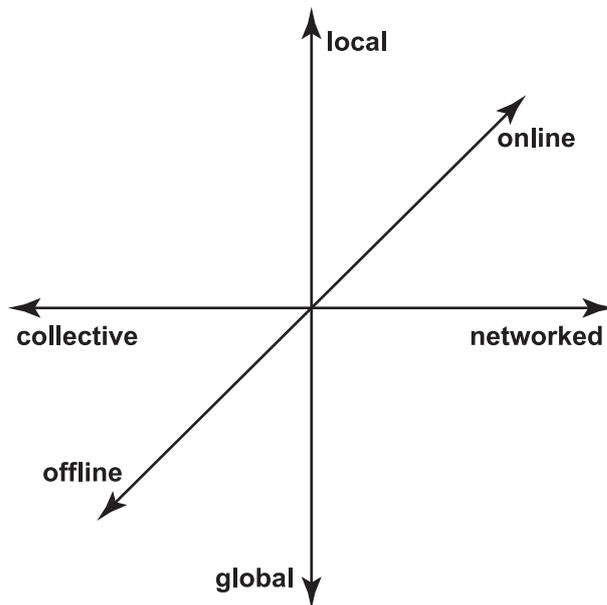

Figure 5: The three dimensions of a communicative ecology

Apart from certain differences in social behaviour based on demographics as indicated in the main discussion above, especially the differences in age and length of residency, the residents at Alpha and Sigma indicated a preference of the 'sociability in place' component by Alpha residents and a 'discussion about place' component by Sigma residents, with Melba mostly in between. Residents at Alpha are more interested to make new friends and to establish or compliment their social network, whereas residents at Sigma seem to be satisfied with their established social network (with members outside the building) and due to their longer term residency focus on issues relating to the maintenance and running of the building. However, the results are not exclusive, that is, Alpha residents acknowledge benefits from a collective interaction approach and Sigma residents acknowledge benefits from a networked interaction approach. Hence, a dual approach towards neighbourhood animation seems to be ideal to take the hybrid qualities of networked individualism into account.

Personalised networking conducted within a defined geographical area can contribute to the creation of neighbourhood identity. Although private emails, SMS texts, and instant messaging between two residents may look like a negligible occurrence compared to the 'critical mass' ambitions of collectivist approaches, such forms of peer-to-peer communication create social clusters, social networks and thus interwoven meshworks of networks and social clusters which arguably present a new appearance of community (Arnold *et al.*, 2003; Rheingold, 2002; Satchell, 2003; Watters, 2003a).

Will these social networks be capable of reviving forms of civic engagement and social capital in a network society? We agree with Watters who critiques Putnam's (2000) narrow interpretation of social capital by arguing that "social capital comes from much more fluid and informal (yet potentially quite close and intricate) connections between people. [...], social capital could as easily accrue among a tight group of friends yet still have an effect on the community at large." (Watters, 2003a, p. 116). It is therefore imperative to utilise a holistic approach that recognises the importance of inter-relationships between different communication methods and between different social dimensions. Individuals in networks give rise to emergent collective behaviour. The peer-to-peer use of communication devices and applications such as email, mobile phones and instant messengers in combination with face-to-face interaction gives rise to a 'communicative ecology' of urban residents. The challenge for the future is to develop a greater understanding as well as applications and interventions that recognise not only the online and offline appearances, but especially the hybridity of this communicative ecology that shows both collective as well as network qualities.

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