

## Chapter XIII

# Wired High Rise: Using Technology to Combat Social Isolation on an Inner City Public Housing Estate

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### ABSTRACT

*The chapter poses questions about the goal of building community through the creation of local networks, using the example of an entrepreneurial scheme to create a resident-run computer network in the Atherton Gardens high-rise housing estate in inner Melbourne, Australia. The scheme stems from a social partnership between a non-profit organisation, government and community groups; the aim is to enable residents to re-enter training, employment and community activities. The first stage of the paper places the scheme in the context of broader debates on the digital divide, information poverty and social capital, drawing out existing problems in the field. The authors discuss the problems of tracking the social impact of computer networks on 'communities', especially where there is a great diversity of*

*interest and allegiance. The Atherton Gardens Reach for the Clouds initiative exemplifies such difficulties. The chapter argues that enthusiasm for this innovative scheme should be balanced by caution in using the vocabulary of social capital and community-building. It cannot be assumed that online communication will build social connection off-line, given the diversity of interests, groups and allegiances within groups. This argument is made drawing on the initial stage of survey-based research on Atherton Gardens residents' patterns of computer and media use, of employment and training, social connectedness, use of social services and experience of living on the estate. The authors conclude by reflecting on the broader implications of the case study for research on the social impact of computer networks on multi-ethnic populations with diverse needs, interests and allegiances.*

## INTRODUCTION

This chapter draws on the first stages of a three-year evaluation of the social impact of the Atherton Gardens' network, or 'Reach for the Clouds', Melbourne, Australia. This is a bold scheme for community renewal through technology; it involves installing free, donated and network-ready personal computers in the apartments of a high-rise public housing estate in inner city Melbourne, wiring the buildings of the estate and providing an estate-wide intranet, e-mail system and cheap Internet access. The aim, ultimately, is to encourage residents to own and run the network themselves, to train one another and develop partnerships with private sector and community bodies around the estate, and to develop employment opportunities and economic benefits from the enterprise. The project was developed by a not-for-profit Internet Service Provider (InfoXchange Australia). It has also drawn on support from state and local government departments (Department of Human Services, City of Yarra), private firms (Microsoft, Hewlett-Packard) and welfare organisations (Brotherhood of St. Laurence, Outreach Victoria, Jesuit Social Services).

The Atherton Gardens network project depends on a number of co-operative agreements and partnerships. Support came from various quarters. The computers were donated by big business and state government departments when those organisations upgraded their own hardware. Computers, monitors and printers recycled in this way were refurbished through a program called 'Green PC', funded through the State Government Community Jobs Program, employing long-term unemployed people. The local council provided workshop space for this program. In order to be eligible to receive one of the reconditioned computers, Atherton Gardens residents were required to complete ten hours of training in basic hardware and software use. This training was carried out by a large pool of volunteer trainers drawn from the estate and the wider Melbourne community.

The project depended on a complex network of funding and in-kind support. New computers, printers, scanners and a digital camera were donated to equip the training rooms by Hewlett-Packard through their corporate philanthropy program, whilst Microsoft donated site licences for Windows 95 and Office 97, both for public access training computers and for the computers to be installed in residents' homes. The Victorian State Government's Office of Housing, which was responsible for managing the estate, paid for the network wiring to be installed, as well as providing flats for use as training facilities and some operational funding. Not-for-profit organisations such as Outreach Victoria, Jesuit Social Services and the Brotherhood of St. Laurence provided support to the project both in cash and in kind. Evaluation was funded by the Commonwealth through the Australian Research Council's Linkage Program, in partnership with the Victorian government's Primary Health Branch and Office of Housing. After some delay, the Victorian Department of Premier and Cabinet agreed to support the scheme through the Community Support Fund, enabling the employment of a project manager and staff to install and maintain the computers. By August 2002 around 300 residents had completed the training, around 250 households had received their computers, and the wiring of the estate was complete. The buildings were wired up in late 2002, the intranet was being established and funding had been found for free Internet access.

The longer-term impact and significance of the network is difficult to predict, as we shall argue. We will also seek to show, though, that even in its early stages, the initiative offers a rich case study of the conceptual problems associated with research on the social impact of technology. The initiative offered a rare instance of a successful effort to build a computer network for and with a low-income and multiethnic population, on the one site. The project was neither initiated nor driven by government agencies, although state and local governments made contributions. Instead, it was an instance of an entrepreneurial scheme for self-help and community-building, emerging from the not-for-profit sector. The intention was for the community network to be owned and run by the residents themselves, as the not-for-profit agency bowed out of the project. Although there were equivalent low-income wired community experiments in North America and the UK, the authors know of no others directly comparable to the Atherton Garden *Reach for the Clouds* initiative.

The initial stage of research on this developing project, reported in this chapter, focuses on the conceptual and practical problems of tracking the social impact of the network on the lives of residents within the housing estate, and on the surrounding social and economic environment. Understanding this involves placing the case study in the context of rapidly moving policy and research debates on information poverty, on the digital divide and potential remedies, and on community-building and social capital. *Reach for the Clouds* was able to couch its appeal to funding bodies and government agencies within these terms. It is therefore important to understand the extent to which it represents a trend

in social policy and information policy, towards seed-funding community-based information technology initiatives, even where it is not clear what constitutes community.

## DIGITAL SOCIAL DIVISION

The ‘digital divide’ entered the policy lexicon via *Falling through the Net*, an influential 1995 study by the NTIA within the US Department of Commerce, which began a series of reports tracking the relationship between ‘information haves’ and ‘have-nots’ in terms of household access to a computer and modem. Access to telephones, personal computers and computer networks at work and at home was linked to race, income, education and location (NTIA, 1995). By the time the second report was published in 1998, the ‘digital divide’ tag was in wide use (NTIA, 1998). Educated professionals, white-collar workers and middle-class families who had embraced technology at work and home, it was argued, enjoyed an advantage in the school system and the labour market (Aspen Institute, 1999). Because they were able to call on information, cultural resources and communications networks, they had more options for extending professional, friendship and family networks, or for exercising consumer choice (Pew Internet and American Life Project, 2000). Those who did not enjoy these advantages remained marginalised from the new economy, the changing labour market and the online resources offered by banks, supermarkets, schools, real estate agents and government.

In the last decade, government-sponsored and independent research has focused on persistent patterns of disparity in access to technology — telephone connections, personal computers, Internet access or broadband connections. In Australia, this pattern of disparity is most clearly marked in differences between urban, rural and isolated communities, but it is also related to income, to levels of education, to gender and to indigeneity (ABS 2001; Lloyd, Given, & Hellwig, 2000). Educated young urban professionals are still most likely to access the Internet at work or home. Those in isolated and regional areas are likely to have lower rates of access, as are indigenous people and those with little English or poor literacy (ABS, 2001). The same populations are likely to need access to the commercial, social and governmental services that are now being provided online. Their children are also likely to lack access to a computer at home — the most recent national survey of school students’ access to information technology indicates that early home access is significant in building computer skills, especially where schools have comparatively poor facilities (Meredyth et al., 1999).

The broader public policy debate on the digital divide has established a now-familiar equation between information poverty and risk of economic marginalisation (DETYA, 2000). In the context of preoccupation with the

information economy, globalisation and the comparative mobility of 'knowledge workers', technological and problem-solving capacities are seen as critical to effective negotiation of the world of work (Giddens, 2001; Latham, 1998; Tanner, 1999). Those who cannot seek and find information will be marginalized; those who can do so will be able to seek help, find local resources and re-enter the labour market, education and training.

The digital divide policy debate has shifted since the mid 1990s, however, in tandem with political shifts away from an emphasis on centralist national information policy. In the US, the Bush government wound back the interventions of the Clinton-Gore administration, which had favoured federal intervention and subsidy to even out disparities in access to computers, especially in schools. Critics were able to argue that the digital divide problem had been solved, as expanding markets made personal computers and connections affordable, helping groups to achieve connectivity (see Compaigne, 2001). The most recent NTIA report now speaks of the goal of a 'nation online', as more than half the population had an Internet connection at home (62 percent in the case of households with children) (NTIA, 2002). Digital divide experts have pointed out, however, that access to computer hardware and Internet connections does not in itself overcome information poverty. Other barriers remain, including illiteracy, the dominance of English on the Web, the lack of culturally appropriate content and, perhaps most importantly, broader patterns of educational disadvantage that limit individuals' ability to navigate online information and communication systems (Norris, 2001).

The link between education, social exclusion and information poverty is an important one, given that citizens and consumers are increasingly expected to be able to find services online (Fountain, 2001; Compaigne, 2001; Norris, 2001). Across the OECD countries, governments have been promoting electronic government and online social services, from tax to unemployment and sickness benefits. Provision services online may help agencies to cut costs, channel inquiries and target services to particular groups (Fountain, 2001). However, lower-income and less educated people are likely to remain less adept in using technology to find information, especially where they are not fully literate or do not speak English.

Policy options for addressing information poverty are evolving. Current research indicates that having access to a computer and Internet connection in the home is important. The problem is that, notwithstanding the increasing affordability of personal computers, the choice to buy a computer remains a private one. Governments are already reducing their commitment to subsidising computers and connectivity in schools, libraries and technology centres. It may be increasingly difficult to persuade them to support the provision of computer access in private homes, or that such provision should take priority over improving traditional public services. Making the case for intervention may involve advocating programs across portfolios as diverse as telecommunications,

education and training and family and community services. Nor is it clear whether the digital divide is a problem to be solved at the federal, state or local level.

The alternative approach, which has been favoured in the US and UK, is to devolve the issue of access to technology and online social services to the local level, making funding available to support social partnerships. Community groups are encouraged to work with business to invent solutions, persuading community members to volunteer their labour to wire up the local school for instance, or convincing banks and local businesses to invest in community networks. Often, a technology company is used to 'incubate' such schemes, using money won by community agencies. This is the pattern followed by the Wired Up Communities scheme developed by the Blair government under the aegis of the national education department. In terms consistent with that government's focus on 'joined up government', community-based computer networks are seen as a remedy for social exclusion and as a recipe for regional renewal (DfES, 2003).

Nevertheless, despite the enthusiasm that such 'community-building' technology schemes are able to generate, there is as yet little long-term and detailed research on their social, civic and economic impact. Experiments in the creation of community-based computer networks remain rare; it is even rarer to find studies of low-income and multiethnic computer networks of the kind being created at Atherton Gardens. Tracking such social impact requires the careful identification of social indicators based on patterns of interaction within the groups concerned, both before and after the introduction of the computer network. In developing such research, various conceptual difficulties arise, not least the question of how to understand the relationship between online communications and off-line social contacts: this is important in clarifying current understanding of the extent to which computer networks can be expected to offset social exclusion by fostering trust, generating social capital and building community.

## **COMMUNITY BUILDING AND SOCIAL CAPITAL**

The broader literature on community informatics is ambivalent about whether or not giving people intranet and Internet connections makes local communities more connected and cohesive. Some warn that computer use and connectivity may reduce social connectedness by stranding people in front of private screens. Others hope that it may reduce social isolation, helping people to find new points of exchange with those of similar interests. In the absence of substantial longitudinal studies, it is still difficult to tell how much the social impact of Internet, e-mail and computer use bears out fears that technology will encourage social isolation or vindicates those who expect technology use to

create 'more and better social relationships by freeing people from the constraints of geography or isolation brought on by stigma, illness or schedule', linking people 'on the basis of common interests rather than convenience' (Kraut, Patterson et al., 1998: p. 1017).

Chat groups, e-mail and online forums may help to offset the geographic and social isolation of those in remote communities or of families separated by distance and migration. New means of communication which are comparatively cheap, quick and safe to use may help those with physical and mental disabilities that prevent them from leaving their homes. They may enable people to connect with each other, find support, express opinions and shape decision making, whether among family and friends in different places or among strangers, such as members of a support group or association. They may help people to find information in their own language, to contact government agencies and use online goods and services such as banking, using e-mail and chat groups. Socially excluded groups may be better able to express opinions, form communities of interest and participate more effectively in local decision-making.

These possibilities and predictions have helped us to frame our research expectations of the likely social, economic and civic impact of the Atherton Gardens network. This project will assess the extent to which residents have not only used the donated computers but have also become involved in the processes of installing the network, training themselves and others and making decisions about the network. Our research tracks the extent to which online patterns of connection between residents and resident groups alters the existing patterns of social exchanges and social attitudes on the estate. One way to interpret such patterns is in terms of the relationship between trust and social capital.

Developing indicators of social capital and adapting them to research on computer networks requires some adaptation of existing frameworks. Much social capital and community participation research in Australia has focused on the small, relatively homogeneous traditional face to face 'community' (small rural town or urban neighbourhood). This is consistent with the model of 'social capital' developed by American researchers (Putnam, Leonardi, & Nanetti, 1993) who focused on contrasts between civic life in the north and south of Italy in the 1970s. Their proposition was that communities in the north were prosperous, successful and civic-minded because people engaged with their neighbours, participated in voluntary organisations, read daily newspapers and maintained an interest in political affairs. In the south, by contrast, individuals put the family unit ahead of the wider community and distrusted outsiders, even elected public officials; consequently, civic life was characterised by corruption, crime and economic stagnation. Civic-mindedness, on the model of northern Italy, is the model for social capital as Putnam and others redefined it. Successful communities are strong in the 'networks, norms and trust' that enable individuals to work together for the common good, not just the good of kith and kin. Those who lack

such mechanisms of incorporation and cooperative behaviour are suspicious, individualistic and poor in social capital.

This model of social capital remains influential. Various Western countries, including America and Australia, have been diagnosed as plagued by declining levels of social capital, as measured through participation in voluntary activities, church attendance, interest in political affairs and involvement in local issues and events. Social capital is now strongly associated, in Australian and other national social policy debates, with civic participation and with the ability to bond with others outside the family. The term is widely used to refer to the need to monitor the social effects of economic policy changes.

The expanding literature on social capital and community-building is too broad to canvass here. There are clear problems, however, with assuming that 'community' is organic or naturally cohesive. In popular understanding, the notion of community usually translates to a geographically co-located group who utilise shared facilities (schools, hospitals, parks), participate in the same political process (local council area) and who share an interest in local issues and amenities. Thus the community of a single suburb may share concerns around local council decisions on planning, whereas the Australian community as a whole shares concern for issues of national importance. Communities can exist at different scales and are not mutually exclusive (Bryson & Mowbray, 1981, p. 262). The classic sociological definitions of community involve groups that have more than just a single strand of interest to bind members, but consist of a network of people linked by a shared set of interests and concerns (Bender, 1982, cited in Galston, 1999, p. 8; Bryson & Mowbray, 1981, p. 256). The difficulty is to distinguish between the shared interests that bind narrow and exclusive groupings based on loyalty to kith and kin from those that foster the general good (Granovetter, 1973). To recall the long-standing debate between communitarian and liberal thinkers, definitions of the general good needs to encompass the needs and interests of individuals, who may wish to identify with one or more group, moving between identifications and affiliations (Kymlicka & Norman, 1994).

Our evaluation of the Atherton Gardens network has sought to build on these more complex understandings of community and social capital. We have not assumed that social contact (online or off-line) necessarily leads to neighbourliness, altruism and trust. Nor have we assumed that the benefits to be derived from the social capital built by groups (trust, social co-operation and economic exchange) are always likely to promote the greater good of the general population of the housing estate. As an alternative, we have sought to adapt Woolcock's (1998) revisionist account of social capital, which builds on Putnam's distinction between different kinds and dimensions of social exchange (see Hopkins, 2001). We anticipate that when residents of the estate use the computer network, they will be building, in part, on complex existing allegiances, identities and communities of interest, shaped by factors such as age, length and place of

residence, country of origin, language group, faith, family structure and so on. If this is the case, they may build on associations that have both negative and positive elements. The network may strengthen bonding social capital – the ties that bind small groups of kith, kin and other affiliations. The results could be both positive and negative, promoting general sociability or exclusion. The network may also strengthen bridging forms of social capital — exchanges beyond existing groupings on the estate, either within or outside Atherton Gardens. Again, we will need to assess the effect of this in terms of our general interest in the extent to which the computer network enables socially excluded individuals and households to access a wider range of information, social contacts, educational opportunities and co-operative resources in their immediate environment and in the institutions around them.

## **USING TECHNOLOGY TO BUILD COMMUNITY**

When assessing the social impact of the computer network, it is important to avoid assuming that, in themselves, e-mail, intranet and Internet necessarily build social connections in the off-line world. Discussions about online communities aim to distinguish between the bonding created by shared physical location or place, and the links created by shared interests and activities. However, the existing research on online community is sparse, highlighting the unexpected and unpredictable social impact of connectivity.

No doubt cyberspace does allow some users to overcome place-based limitations to communication. Fans of soap operas, new parents and cancer sufferers in Australia can exchange news, gossip and items of interest with others in Sweden and South Africa. On the other hand, these online forum communities of interest could be regarded as insubstantial compared to face-to-face patterns of sociability and exchange (Galston, 1999, p. 3). Unless a computer user is communicating with someone that he or she already knows from face to face contact, the relationship does not function in the same way as a real world relationship does. Issues of identity, trust, honesty and responsibility can be subverted in an online environment. Anonymous or pseudonymous communication allows a sender to deny or evade responsibility for the outcomes of their actions, hence the proliferation of anti-social content in Web pages, e-mail messages, bulletin boards and the like.

Some research suggests that access to computers and online communications does not automatically lead to social connectedness and can in fact have negative consequences for social capital and community development. Some studies of social connectivity in Internet users found that greater use of the Internet was associated with declines in communication with family members,

shrinking social circles, and greater depression and loneliness (Kraut et al., 1998, p. 1017; cf., Nie & Lutz, 2000). Others found that Internet and e-mail use in particular built on existing social ties, sociability and family connection, enabling women in particular to create stronger relationships with friends and family (Pew Internet and American Life Project, 2000). Much depends, however, on the interests, capacity and location of the individuals and groups concerned (see Benton Foundation, 1998).

For this reason, the Atherton Gardens case study promises to be a rich one, not least because of the diversity and complexity of the resident population itself. Not only is it difficult to define and apply terms such as social capital and community-building to online and off-line patterns of social connection; it is particularly difficult to do so when addressing the attitudes, habits and needs of a multiethnic, multilingual and multifaith population that is highly mobile and much-studied. Where Atherton Gardens differs from accepted models of both geographic communities and communities of interest is in its multiethnic, mobile and diasporic population. Not only is there no single linking theme or interest, but there is no single sense of place. Given residents' cultural, economic and imaginative links to other places, we could say that the estate recombines in one place fragments of many places.

## **A SOCIAL PROFILE OF ATHERTON GARDENS**

The *Reach for the Clouds* initiative is described by its organisers as “a community building project designed to assist the development and maintenance of community capacity and cohesiveness at the Atherton Gardens estate, Fitzroy by utilising new technologies” (InfoXchange, 2001). The stated aims are to: ‘improve the social, economic and environmental circumstances of the Atherton Gardens community’; and ‘strengthen the capacity and cohesiveness of the community and its networks’ (InfoXchange, 2001, p. 2). Understanding these objectives and assessing the extent to which they are likely to be met depends on a good understanding of the Atherton Gardens estate, its reputation and the characteristics of the residents, as we have begun to identify them.

Atherton Gardens consists of four twenty story tower blocks, with ten flats on each floor, comprising a total of 800 dwellings, and housing some 2,000 individuals. The estate has a reputation, fed by tabloid profiles, for being a centre of crime, drug use and domestic violence. It is surrounded by a cluster of welfare and community agencies. Welfare organisations such as the Jesuit Social Services have documented long-standing problems on the estate. According to the research, Atherton Gardens residents tend to have low-incomes, long-term problems with unemployment or underemployment, low levels of formal educa-

tion and limited English. They tend to be socially isolated, particularly those who have limited mobility due to disability, other health conditions or childcare and other family responsibilities (see e.g., Guinness, 2000). Many are immigrants to Australia who do not have extensive networks of family and friends in the Melbourne area. Whilst a significant minority of residents on the estate have arrived in Australia from Vietnam and speak Vietnamese as their preferred language (~40%), residents belong to more than 30 different language groups and come from countries as diverse as Turkey, the former Yugoslavia, Spain, Greece, Iran, Iraq, Chile, China, Laos, the Philippines, Somalia, Eritrea and Ethiopia. Less than 30% of residents were born in Australia. Lack of a common language inhibits the development of neighbourly ties with other residents, even after many years of tenancy. Fear of violence and robbery in public areas of the estate prevents many people from using common facilities such as stairwells, laundries and playgrounds, or participating in community events. Residents report constant problems with the cleaning and maintenance of the aging buildings; they say they would like more information on the management of the estate, on their own tenancies and maintenance and safety, but many find it difficult to access that information in their own language.

This, in brief, was the available social profile of the Atherton Gardens estate when we began the research. Based on our understanding of the literature on the digital divide, social capital and community-building, we assumed that the place to start, in tracking the social impact of the developing computer network, was with the existing social networks on and around the estate. A number of research tools have been deployed in this first stage of research, largely carried out in the period of more than a year between the first rollout of the computers into apartments and the wiring of the buildings, establishing the computer network. The organisers and partners involved in Reach for the Clouds have been interviewed, a round of resident focus groups has been held and a first round of resident surveys has been conducted.

The focus groups indicated that despite the proximity within which resident groups live to each other, the high degree of diversity among estate residents' cultural and linguistic backgrounds (i.e., there is no majority cultural or language group) leads to limited mixing between members of different groups. Many residents, even those who have lived on the estate for a long time (more than 10 years, for example), socialize only with members of their own language groups, and do not exchange more than a nod or smile with next-door neighbours who speak a different language or who come from a different ethnic background. Chinese and Vietnamese residents say that they tend to shop out of the Fitzroy area surrounding the estate, going instead to the nearby suburb of Richmond, where there is a concentration of shopkeepers speaking Asian languages and shops selling Asian groceries and foodstuffs.

This pattern also emerged in discussions with residents involved in the training sessions. Here it appeared that while residents were eager to find out about using the Internet and getting access to e-mail, this was rarely because they were committed to the idea of a local Atherton Gardens intranet or to making more contacts on the estate. Most expressed little interest in using the network to access local government information or to learn work skills such as the use of word processing packages. Instead, they were most eager to communicate with friends and family a long way away, both in Australia and overseas. E-mail in particular looked likely to provide a cheaper alternative to weekly interstate and international phone calls.

## EARLY RESEARCH FINDINGS

Our early results from focus groups and interviews undermined any lingering assumption that there was a single Atherton Gardens community that pre-existed the construction of the computer network, and on which we could expect it to build. While to outsiders the estate seems to exist as a distinct entity among its gentrifying surrounds, for residents there is no real sense of a single estate community. Instead, some residents see themselves as belonging to small, generally ethnically-based community groups such as the Cantonese speaking group or the Turkish group. In some respects, residents are linked by religion as well as or perhaps in spite of country of origin or language spoken; initial results from the first survey indicate high rates of participation and active involvement in local places of worship, Christian, Buddhist and Muslim.

The strong, mutually supportive and self-sustaining small ethnic communities on the estate can be seen to be high in social capital at one level. They exhibit what Granovetter (1973) calls strong ties and what Woolcock (1998) calls 'bonding capital', which supports the members of the group and reinforces social solidarity among them. On the other hand, such groups may be exclusive of outsiders and may unduly restrict members from seeking or establishing relationships with others outside the group (Granovetter's weak ties, or Woolcock's bridging capital). Thus the ethnically or linguistically-based social groups can be seen to be low in social capital at the estate community level. Improving social capital will require not just a simple maximising of social relationships and increasing communication channels, but the establishment of a delicate balance between strong groups that are high in bonding capital and wider, more diverse social relationships which contain multiple, weaker ties, or are high in bridging capital. Attempts at 'community strengthening', 'community building' and 'community renewal' need to take these different levels of social capital into account if they are to contribute to building healthy, inclusive communities.

These research observations were confirmed by results from the first survey, conducted over six weeks starting May 27, 2002. This sought residents'

views about computers, about conditions on the estate, and about their current patterns of media use, social connection, friendship and family networks, employment circumstances, health needs and attitudes to their neighbours and to the Atherton Gardens estate itself. The survey was conducted through an initial phone contact with residents. This was followed up by face-to-face interviews conducted by speakers of the tenants' main language groups (Vietnamese, Cantonese, Mandarin, Macedonian Turkish and Arabic). Of the approximately one-third of households that were contactable, around 70 declined to be interviewed, thus resulting in the total of 199 responses. The sample of respondents included residents from 31 countries of birth, principally Vietnam (44%), China (12%), Australia (13%), Macedonia (6%), and Eritrea (5%). These results will be balanced by those derived from a 'control' group (a similar estate in the neighbouring suburb of Collingwood, which is not part of Reach for the Clouds). The survey will be repeated in mid-2004. Follow-up interviews will also be held with a smaller number of households as the network use expands. Further focus groups will also be held, supplementing the second round of surveys. Uses of the intranet and the Internet will be tracked, although the anonymity of the users will be preserved.

Drawing on a sample of Atherton Gardens households (200 households out of 800), it was possible to establish a social profile of residents. We confirmed that most are low-income [58% of respondents are from households living on less than \$20,000 p.a., while about a quarter (27%) live on less than \$10,000 p.a.]. The vast majority of households do not have a person working full-time (90%). Just under three-quarters of households do not have anybody working either full-time or part time. A quarter of the respondents had, however, been looking for work in the past two weeks. About a third were not looking, either because they were looking after children or family members (28%) or because they had medical conditions (22%). Nearly half of the respondents (49%) said that they spoke English 'not well' or 'not at all'. About 15 percent of respondents have only primary level education (three-quarters have senior secondary).

This appears to be a population with high educational needs. Those who had a *Reach for the Clouds* computer reported that they used them for educational purposes, either for their own study (41%), or to help children with homework (36%). Overwhelmingly, respondents said they enjoyed learning new skills and wanted to do further study. Some were studying (15% F/T, 13% P/T). Those who were not gave reasons such as caring for family members, lack of time, expense and either a lack of literacy or inability to speak English (12%).

This is also a population with high communication needs. A quarter of respondents reported that they have face-to-face contacts with their family, siblings and friends very rarely (less than yearly for a quarter of respondents). They tend not to use letters to sustain contact; about half of the respondents make telephone contact with parents and with siblings either monthly or weekly.

However, 87% of respondents said that their residence had a telephone. The majority said that they were not satisfied with the amount of international news available to them, especially from their home country.

Questions designed to build a picture of social connectedness, trust and social capital on the estate elicited a more ambiguous set of responses. The majority of respondents agreed that Atherton Gardens was a good place to live (66%). They also agreed that the estate had good facilities and 'a good mix' of people. Nevertheless, about a third of respondents said that they felt unsafe on the estate. Most did not know their neighbours well; the majority said that they knew their immediate neighbours slightly, but about a third did not know them. More than half trust none of their co-residents in the same tower. They trust those in other towers even less.

The research continues to map patterns of social connectedness both online and off-line, tracing different forms of association, identification and allegiance. The difficulty appears to be to determine whether the provision of computers, connectivity and activities associated with training and use build cohesiveness within and between these different groupings on the estate. The computer network offers residents both cheap long distance communication and accessible local information. In that respect it depends on both location and dispersion of interest. Some residents may want to use either or both of these services, without necessarily wanting to get to know their immediate neighbours any better, or indeed trusting them any more than they do now. So while the network may build online communities, it will not necessarily build community on the estate, if by that we mean promoting social connection, mutualism and altruism between residents.

Even if the residents do e-mail one another or have more contact with others on the estate through bulletins, forums and chat groups, this will not necessarily mean that they are more likely to attend or speak up in public meetings off-line, or to listen better to others. Nevertheless there may be many activities associated with setting up and sustaining the computer network that will build co-operation and self-help, both within Atherton Gardens and between the estate and the wider world. These include the mixing of residents in the computer training rooms and interaction with volunteer trainers, who come both from the estate and from the wider community. The involvement of residents in project steering committees and the intranet working group builds skills in participation and network management. Use of the training room computers for sending e-mails and accessing the World Wide Web began extending access to information and new communication channels. Children's educational outcomes may be expected to improve, given increased access to computer technology and information sources. Employment opportunities may emerge, both from the ultimate handover of the network to resident management and from the effect of training in helping people acquire work skills and conduct job searches. Dissemination of

information from government, not-for-profit agencies and businesses may draw residents into the information society. The main lesson of the Atherton Gardens project lies in the observation that the network cannot be expected to 'fill in the social capital gaps' in a simple way.

## CONCLUSION

There is a pressing need for fine-grained, local studies of the connection between domestic access to new technologies and integrated social services, especially for low-income and multiethnic populations. Notwithstanding the current enthusiasm for online services, government and community service providers need to know much more about how low-income populations are likely to use network-based services. These agencies need to know whether or not home-based access to computers and digital resources does help to make citizens and consumers more active, self-reliant and informed. Projects such as *Reach for the Clouds* can contribute to such discussions by gathering information on residents' use of information technology and social services both before and after the computer network has been established. These initiatives may provide a convincing model of ways in which low-income communities can participate in programs designed to make social services more accessible. Equally, there are lessons to be learned for policy and scholarly debate from the obstacles and problems it encounters, as these low-income residents make use of the computers and network for their own purposes.

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