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Connecting people

Investigating a relationship
between internet access and
social cohesion in local
community settings

A THESIS PRESENTED IN PARTIAL FULFILMENT OF THE
REQUIREMENTS FOR THE DEGREE OF
DOCTOR OF PHILOSOPHY IN COMMUNICATION
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ABSTRACT

The assumption that internet access is a means of building stronger communities is commonly found in a number of sectors, particularly in New Zealand government social services policy. In response to this assumed relationship between internet access and social cohesion, the present multiple case study research project examined the experience of free home internet access among families participating in New Zealand's Computers in Homes scheme in low socioeconomic school communities between 2003 and 2005. The goal of the study was to assess how internet access and social cohesion are related in a free home internet scheme.

Two propositions derived from a literature review underpinned the research goal: first, that internet access leads to ongoing use, and second, that internet access is positively related to social cohesion. The research was designed to test these propositions using a qualitative, constructivist approach with a mixed methodology. The principal method was interviews with adult Computers in Homes family members concerning their internet use and their sense of belonging to, and involvement in, the local community, across two waves of research about one year apart in two community settings. Additional data from observation, interviews and meetings with school principals and key informants such as Computers in Homes staff, provided context. Of thirty volunteer participants from among available Computers in Homes parents at two sites, twenty-six respondents took part in data collection at Time 1. Data from nine Case A and thirteen Case B participants contribute to the results. Nine of the original group participated at Time 2 one year later, seven from Case A and two from Case B.

Internet use declined across the group as a whole, a negative outcome mitigated by positive experiences and individual success stories, and the emergence of 'high-connector' internet users. While evidence of social cohesion was found at both case study sites initially, it was noticeably associated with the activities and interpersonal influence of confident internet users at Case A where significantly greater retention of ongoing internet use also occurred. A key finding of the study is therefore that ongoing internet use was more successfully achieved in a setting where social cohesion was more readily apparent at the time the free internet scheme was implemented. Thus a positive relationship existed in this research between internet access and social cohesion in one case study of two, where conditions included the presence of opinion leaders and social solidarity.

Opportunities for face to face social interaction and support such as are present in Computers in Homes practice are potentially significant for ongoing internet use. The Computers in Homes concept extends participants' social experiences of community through the way it is structured and implemented. In combination with the mobilising behaviours of leader figures, these social experiences may be factors associated with longer term viability of a free home internet scheme as much as the presence of the internet itself. A range of significant barriers affecting individual internet users at home, and larger obstacles such as confused accountability when external agencies are involved in project management, is signalled in this research.

Recommendations aimed at increasing the benefits of a free home internet scheme in terms of participant retention and social cohesion are proposed. Opportunities for further research arise from this study, in clarifying the conditions associated with positive social outcomes for internet interventions with a particular focus on the role of existing group cohesion and leadership dynamics.

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CHAPTER 1: INTRODUCTION

OVERVIEW

What role can we reasonably expect internet access to play in creating socially connected communities? An assumption has existed for a decade in the public sector in particular that access to the internet is a vital component of a happy, productive society (Maharey & Swain, 2000). Yet the actual potential of the internet to shape social settings in which it is used, to cause certain outcomes, is the subject of debate among researchers (Herring, 2004). Now, the view that it may be more helpful to think of the internet as being socially constructed, a technology that is shaped by people in social contexts for their own purposes (Crump & McIlroy, 2003; Merkel, et al., 2005), is becoming more prominent. Such an approach implies that the outcomes of internet access are unlikely to be predictable.

Researchers have explored whether the internet erodes community wellbeing (Jacques, 2004; Kraut, et al., 1998). Alternatively, the potential of the internet to make communities stronger (Pigg & Crank, 2004) has become a focus of interest. Might it be possible for communities to make use of the internet in ways that suit their unique needs (Evoh, 2009)? Research aiming to answer such questions has proliferated during the 2000s; yet the field is still in its infancy. As recently as 2006 the claim has been made that “there is little research on the long term effects of local ICT [information and communication technologies] initiatives on social capital or quality of life indicators, mostly due to the relative novelty of the field” (Gaved & Anderson, 2006, p. 26).

The research described in this thesis aims to make a contribution to this field by providing empirical evidence pertaining to the relationship between internet access and social wellbeing. It proposes to do so by examining how school-based *community groups in low decile settings* make use of *free home internet access* provided by a New Zealand scheme called Computers in Homes, the aim of which is to “support low income communities to use ICTs [information and communication technologies]” (“Computers in Homes”, 2007). In short, the research set out in this thesis concerns the relationship between internet access and *social cohesion*¹.

¹ The concepts in italics in this paragraph are defined in the sub-section of this chapter called Key Constructs.

In addition to providing evidence on the internet-social cohesion relationship as it appeared in two case studies where Computers in Homes was being implemented in New Zealand in 2003, the research identifies conditions associated with successful free home internet implementation which have implications for social policy and practice. Knowledge about the variety of outcomes that can be expected when internet access is provided to low decile communities will help the public, private and practitioner sectors to better support schemes like Computers in Homes which aim to overcome digital inequality ("Computers in Homes ", 2007). Moreover, new knowledge about the dynamics of social cohesion as it relates to a community internet scheme will help those working in community settings to understand how to best harness the strengths inherent at community level in order to successfully embed internet use long term, thus maximising the initial investment in any new ventures.

Following Wellman (2001b; Wellman & Quan-Haase, 2004) who argues the internet is resonating with and building local community rather than eroding it, this thesis suggests we can continue to learn about a significant role for existing social cohesion in establishing ongoing internet use in a community group setting. Following Friedkin (2004), results presented in the thesis suggest existing social cohesion at the group level generates individual level behaviours that contribute further to cohesion, in a recursive cycle. Further, it is likely that if social cohesion builds on itself in this way, and internet uptake is most successful where social cohesion already exists, then a well implemented free internet scheme such as Computers in Homes may indeed contribute to building a stronger community in the manner assumed in the social policy discourse (New Zealand Government - Ministry of Communications and Information Technology, 2008).

An important tool in this research is the literature of social capital which in turn draws on understandings of social cohesion. A number of interconnected theories relating to the characteristics of strong community guide the design, data analysis and conclusions on the research goal in this mixed methods study. The study site of Auckland, New Zealand, and the research setting, Computers in Homes, together afford the opportunity to examine a set of community groups in low decile urban districts of a large metropolitan city, where internet access is provided free of charge at home. Data collection and analysis draws on material from semi-structured interviews with a total of 30 adult study participants. These household interview data were contextualised by means of background interviews, observation, and document review. The unit of analysis is the school community group, of which there were two in the study, Case A and Case B. Nine informed adult members of Computers in Homes families at Case A and thirteen at Case B provided the bulk of the data at the beginning of the

research, as well as school principals and staff involved with the Computers in Homes scheme. A second wave of data collection occurred one year after the first, drawing on a smaller group of the original adult study participants.

This first chapter of the thesis includes:

1. Definitions of key constructs, including a brief overview of the literature in which the proposed study is rooted (preliminary to a full literature review in chapter 2),
2. A brief introduction to Computers in Homes,
3. A statement of the research problem, and
4. An overview of the thesis.

1.1 KEY CONSTRUCTS

This section will provide working definitions of key constructs (numbered 1 – 5 below) used in the study, in order to establish a clear framework for the research and to distinguish them from a range of similar, but not interchangeable, concepts and terms found in the literature:

1. Community
2. Social cohesion
3. Low decile settings
4. Digital divide
5. Free home internet access.

I add 'free home internet access' to the list because this is a defining characteristic of the specific research setting, Computers in Homes. I use the phrase in the thesis to distinguish the specific setting from other community internet models, for example the provision of free internet access using public, civic spaces such as libraries. Other terms related to social cohesion, regularly encountered in the literature, are *social connectedness* (Department of Internal Affairs, et al., 2002; Ministry of Social Development, 2006), *social capital* (Pigg & Crank, 2004), *community capacity* (McKnight & Kretzmann, 1996), and *community building*

(Toyama, 2007). While these terms are used and discussed in chapter 2 where relevant in the context of research and scholarship that makes use of them, social cohesion is preferred in the thesis and underpins the research goal. This preference is justified in more detail in the literature review, section 2.2.2.

Before exploring the five key constructs, a general observation should be made in respect of the relationship between the internet and society. The popular conception of the internet is that it causes social change. This change has at times been viewed as negative, particularly in the early days of widespread internet uptake in the 1990s when fears were expressed about technology undermining our humanity (Postman, 1992; Slouka, 1995) or even becoming ascendant over people (Postman, 1992). The internet is seen elsewhere as a solution to social problems (Department of Internal Affairs, et al., 2002) because it is thought capable of building stronger communities, an assumption possibly connected with its capacity to facilitate social ties (Hampton, 2003), although other data strongly suggest people's social networks have been shrinking in the past two decades (McPherson, Smith-Lovin, & Brashears, 2006). Gaved and Anderson (2006) make the point that the privileging of community internet access as a means of achieving positive social outcomes

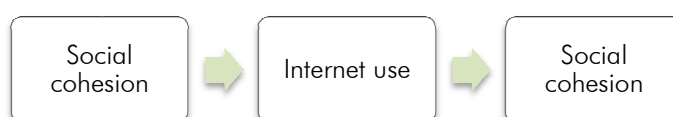
...may be in part because it was assumed that [community internet] effects would be positive... It has been assumed that computer mediated communication can support face-to-face ties, thus halting the decline in social capital highlighted by Putnam (2000). Also, addressing the so-called 'digital divide' is a prime concern for many governments and community initiatives were widely seen as one of the simplest ways to do this. (Gaved & Anderson, 2006, p. 4)

Both pessimistic and optimistic assumptions about the internet and society fall within a view of the world described in the literature as technologically determinist (Herring, 2004). This paradigm assumes technologies determine social outcomes:



However it is by no means clear that the internet will have predictable effects of any kind. Therefore, if internet access is provided in hope of increasing social cohesion, literature at the intersection between internet research and sociology (such as how the process of building social cohesion within an existing group may be facilitated) may prove instructive. For

example, based on a review of individual and group level definitions of social cohesion (Friedkin, 2004) it appears likely that group level social cohesion should already exist in a target community to both facilitate internet uptake and encourage more cohesion. Research such as that described in this thesis which integrates these principles with an assessment of internet access in a given community setting suggests that social settings may first influence the technology, as demonstrated in the choices people are able to make about how to use the internet, or not use it. Subsequently technology may shape society for example by facilitating more social ties. A model for the relationship between the internet and society may therefore look more like this:



The research presented in this thesis assesses the relationship between social cohesion and internet access in a low income community setting both at the start of the free home internet programme and again after a period of time. The model above, implying that an already socially cohesive group makes use of the internet in ways that help to build further cohesion, is broadly applicable to this research based on a comparison between two community case studies. The study primarily reinforces the view that a technology (the internet) is socially constructed, as opposed to the technologically determinist idea that technology shapes society in predictable ways. This hypothetical model is revisited in the discussion of results (Chapter 5, pages 211 - 214).

Key constructs for the research are now defined, with literature relating to them reviewed in more detail in chapter 2. The ways in which they were operationalised in the research design is explained in chapter 3.

1.1.1 COMMUNITY

In the literature review in chapter 2, I show how the New Zealand government has moved to respond to the increasing disadvantage of people who lack access to the internet by earmarking funds for a variety of projects like Computers in Homes in the policy document called the Digital Strategy (Ministry of Economic Development, et al., 2004), in its updated

form known as the Digital Strategy 2.0 (New Zealand Government - Ministry of Communications and Information Technology, 2008). This partnership approach in the public sector context is understood to be tripartite so that the community affected by low internet participation is regarded as a partner to public and private interests (Ministry of Economic Development, et al., 2004). Responsibility for addressing problems becomes at least shared by the local community if not completely devolved to it. However while the community is routinely exhorted to become a partner in this way (New Zealand Government - Ministry of Communications and Information Technology, 2007) public sector discourse rarely specifies what is meant by the term community (Ashton & Thorns, 2004).

Traditionally community is understood as a set of relationships associated with a geographically defined area (Etzioni & Etzioni, 1997); yet it is also argued in the internet literature that “we find community in networks, not groups” (Wellman, 2001c). Community, in simple terms a “group or collectivity” (Vergunst, 2006, p.1), is an often evoked and powerful ideal, as in “vibrant communities” (New Zealand Government - Ministry of Communications and Information Technology, 2007), but because it can take on a range of meanings depending on the context, its precise meaning can be elusive. It may even function as a symbol with different connotations for different people (Vergunst, 2006, p.1). Its use can imply an assumption that we all know what it means, and furthermore that it is a good thing: for example, who would disagree that we should feel part of community life? That community members should look out for one another, be respectful of diverse groups, work together on common causes? That community building is needed in some areas? Community can be small in scale, as in a specific school community, or more diffuse, as in the rural or farming community; while people also identify with a number of different communities, such as their work community, their church community, their community of online contacts, and so on.

Seeking clarity on this issue, Casswell (2001) discusses “Who and what qualifies as community?” (ibid., p. 25) in a social policy context, stating

The word community conveys a sense of connectedness between people and their organisations. In relation to community initiatives funded from outside, this usually relates to geographical locality and, often in New Zealand, also recognises ethnic communities within a geographical area. The community is a social space, a sector made up of informal and relatively unmanaged associations. (Casswell, 2001, p. 25)

While acknowledging that community does not have to be geographical and can be related to organisational belonging, Casswell concludes that within the ambit of social policy “most of

the resourced and evaluated community initiatives in New Zealand have worked with geographical communities" (ibid.). She settles on the view that community expresses relationships (a sense of connectedness) often within a geographically defined area. In the present Computers in Homes study, I use the word community in this sense, to refer to the network of relationships linking families in the geographical community surrounding the school where Computers in Homes has been implemented, to the school and to one another. This network of relationships includes neighbourhood, school-related, family, friendship and other networks arising from the fact of living in that locality. Therefore community in the research presented in this thesis will refer to two inter-related concepts. First, the community is a group of people living in a defined geographical area, that is, a setting; and second it will refer to a set of people who define themselves as part of a community, a symbolic construct that is an outcome of what those people do together.

1.1.2 SOCIAL COHESION

The phrase 'social cohesion' is employed in this study to embody desirable characteristics of a community group that functions well to support individual members and which can arrive at shared priorities, working together to achieve them. A basic working definition is found in the idea that a cohesive society is one that "hangs together" (Kearns & Forrest, 2000, p. 998). While *community cohesion* is sometimes used (Vergunst, 2006) instead, with cohesion "address[ing] the characteristics (and the strength in particular) of the bonds between the individuals who constitute that collectivity or group" (ibid.), most writers prefer the term *social cohesion* (Das, 2005; Forrest & Kearns, 2001; Friedkin, 2004). Social cohesion is understood and explained in different ways such as "overall community wellbeing and interaction benefiting all sectors of society" (ibid., p. 2) characterised according to dimensions like shared values. Vergunst (2006) explains cohesion simply as the bonds that hold people together in a group.

Some uses of the social cohesion construct tend to highlight the *individual's* experience of cohesion – that is, what feelings and behaviours are generated *for individuals* by a cohesive community? Friedkin (2004) observes that social cohesion is defined either through individual level behaviours and attitudes such as volunteerism and participation, or through group level "conditions" and outcomes such as evidence of supportive networks and of social solidarity. A critically important question for those who would wish to build cohesion is, therefore, do the individual level behaviours arise *because* of the group level conditions? Or alternatively, do the group level conditions arise because of the individual level behaviours?

These distinctions were found to be highly applicable to the goal of this study. Friedkin's principle that "groups are cohesive when group-level conditions are producing positive membership attitudes and behaviours, and when group members' interpersonal interactions are operating to maintain these group level conditions" (2004, p. 410) provided a framework with which to drive the research design and interpret the findings. Friedkin's assertion that *group level conditions* come first, and in turn these generate *individual responses* underlies the design logic of the present study: specifically, "we should discard the idea that group-level conditions indicate social cohesion and instead treat these conditions as antecedents of particular individual membership attitudes and behaviours" (Friedkin, 2004, p. 416).

1.1.3 LOW DECILE SETTINGS

In the current study this term is used with a specific meaning. New Zealand's Ministry of Education website defines decile ratings as follows:

A school's Decile indicates the extent to which it draws its students from low socio-economic communities. Decile 1 schools are the 10% of schools with the highest proportion of students from low socio-economic communities. Decile 10 schools are the 10% of schools with the lowest proportion of these students. (Ministry of Education, 2008, 'Deciles information' section)

Thus 'low decile' generally connotes a school community of low socioeconomic status. Further information on the Ministry of Education website about how the ratings are calculated explains "a school's decile does not indicate the overall socio-economic mix of the school" (Ministry of Education, 2008, 'How the decile rating is calculated' section) because the calculation is based on household information from each census, including household income, occupation, crowding, educational qualifications, and income support.

Generally low decile is understood to mean areas where residents are on average earning low incomes, are more likely to be unemployed, have less educational attainment and less access to, or ability to access, the resources and services than those in other areas. The lower the decile rating, the more funding the school is entitled to, on the assumption that the families attending them are more likely to face barriers to educational achievement than those who attend higher decile schools.

The research described in this thesis draws on populations of families from Auckland primary schools involved in the Computers in Homes project which "works via low decile schools to help families in greatest need" ("Computers in Homes", 2007). Computers in Homes targets

schools within socially disadvantaged settings where, broadly speaking, incomes tend to be low, families may be transient and lack the resources to support children's learning. The decile 1 rating is indicative of low income, but as is true of any community, not all households will fit an aggregate rating based on census figures. Also schools opting to use the Computers in Homes scheme are at liberty to use their own means of deciding which families are "in greatest need" ("Computers in Homes ", 2007). It may be expected that this description is interpreted in different ways. In chapter 3 where data are presented on the parent participants involved in this study (Table 3-2, page 104 - 105) on the whole it can be seen that income and educational achievement are low, but expected low decile characteristics are not uniform across every household.

1.1.4 THE DIGITAL DIVIDE

In the mid-1990s, this term began to be used to describe the relative disadvantage of those who do not have access to or are not equipped to use computers and the internet. As will be shown in some detail in the literature review in chapter 2, the social and economic inequalities arising from this relative disadvantage are viewed as a problem to be solved, most often by focusing on internet access. However just as the word community is generally not defined in public sector discourse, neither is there sufficient research on assumptions about the social outcomes of increased internet access (Barrera-Osorio & Linden, 2009) even though it is argued to have a positive impact (Ministry of Social Development, 2006) on educational achievement, employability and community wellbeing (New Zealand Government - Ministry of Communications and Information Technology, 2008). Recent large scale randomised research on the supposed benefits of increased computer access for educational outcomes in fact finds a "widely implemented national program has no effect on students' academic performance" (Barrera-Osorio & Linden, 2009, p. 25). Further research such as the present study is required to clarify what may reasonably be expected from community interventions aiming to redress digital inequality with simple internet access.

1.1.5 FREE INTERNET ACCESS

First, throughout the thesis I use the now accepted 'small-i internet' rather than the capital letter 'Internet'. Just as capital letters were originally seen in other specialised information age terms like e-mail, once they are accepted in general usage, a lower case letter is adopted.

This occurred around 2003-2004, when “the stand-alone capital-I ‘Internet’ became the more widespread and complex small-i ‘internet’” (Wellman & Hogan, 2004, p. 54).

Next, in this thesis I use the overarching term ‘community internet’ to describe a programme or intervention designed to overcome digital inequality, and defined in this way by Gaved and Anderson who comment that the term

...may merely mean a village website (Liff 2004), or collaborative provision of internet access to a locality. We ... focus on initiatives that actively engage with assuring infrastructure development, services based on this infrastructure, and ongoing social and technical support to the community. (Gaved & Anderson, 2006, p. 7)

In these terms, the New Zealand Computers in Homes free home internet scheme is one model of community internet, providing infrastructure, services, social and technical support to the targeted community, but there are other models. The present study does not propose to address those other types of community internet models.

Alternatively, the term “community ICT” is regularly seen, especially in the New Zealand policy context. There, ICT is defined as

...information and communications technology. The term includes electronic information-processing technologies such as computers and the Internet, as well as fixed-line telecommunications, mobile phones and other wireless communications, broadband, and various specialised devices ranging from barcode scanners to global positioning systems (GPS). ICT devices can be embedded in other machines and appliances, from watches and washing machines to cars, to increase their functionality. (Ministry of Economic Development, et al., 2004, p. 10)

My preference for using the term internet rather than ICT reflects an intention to narrow the focus in this research to include only the technology supplied to families involved in Computers in Homes, while ICT is clearly a more inclusive term. At times, however, in citing other sources which refer to community ICT, I defer to those authors’ preferences. When referring to *community internet* I call attention to the numerous community intervention schemes around the world that have sprung up since the late 1990s when the digital divide became recognised as a socioeconomic issue. ‘Community internet’ is a tactic employed – generally by a government agency or partnership between public, private and community interests - to sidestep income, employment and education disparities. The aim is to maximise the opportunity for people to access internet functionality, particularly those who cannot afford to buy the hardware or pay for an internet service provider. Community internet schemes therefore range from the One Laptop Per Child movement (Markoff, 2006), to internet access

using mobile phones, to schemes in which the internet is made available at public access points such as public libraries or internet kiosks (Warschauer, 2003). The intention here is not to evaluate the relative successes of such interventions but reading on the subject will show that they are not always successful (ibid., p. 2) and much research remains to be done in this field.

The Computers in Homes type of scheme is dedicated to providing no-cost internet access at home using recycled computers to families who would otherwise not be able to afford to pay for it. In using the phrase *free internet access* I specifically refer to the Computers in Homes model which provides a recycled computer, six months internet service, 20 hours of training, and ongoing support to qualifying families for no cost other than a \$50 joining fee. The following section provides background information on how this scheme works, as a foundation for the research project that is described in subsequent chapters.

- COMPUTERS IN HOMES

The Computers in Homes free home internet model is unique to New Zealand, although similar schemes are found worldwide, such as Computers in Education (Barrera-Osorio & Linden, 2009). Computers in Homes was launched by the 2020 Communications Trust, a non-governmental charitable trust which applies for government funding, with Ministry of Education funding as a pilot in 2000. The scheme is a partnership between public and private sectors to refurbish computers donated by private organisations, offer them to schools in decile 1 communities, and guide the schools in distributing them to families most in need, with training support. The Computers in Homes mission is “to provide all New Zealand families who are socially and economically disadvantaged with a computer, an internet connection, relevant training and technical support” (Computers in Homes, 2007, ‘About CIH’ page, ¶1).

Since the early days of pilot projects in Wellington (Newtown), Auckland (Panmure) and Hastings (Flaxmere), Computers in Homes has grown significantly both in the number of communities within which it is operating, and in the scale of funding that is now being directed towards it through the New Zealand Government’s Digital Strategy. From four communities in 2002, Computers in Homes is now established in a wide variety of community and educational settings in more than 200 schools around New Zealand. A digest of key information about the scheme provided by Computers in Homes is appended to the thesis for further reference (refer Appendix 5).

1.2 BACKGROUND

The concept of a growing digital divide was my primary point of interest as I began to conceptualise this study. The internet exclusion issue, which can be viewed on a global (Norris, 2000) as well as national (Cartier, Castells, & Qiu, 2005; Husing & Selhofer, 2004) and local (Li Shu-Chu, 2004) level, has received a great deal of political, scholarly and popular attention in recent years. As worldwide interest in the nature, meaning and consequences of this digital divide for communities, societies and nations gathered momentum, so my interest grew in examining it within the New Zealand context. Governmental response to the digital divide in New Zealand involved increasing internet access (Department of Internal Affairs, et al., 2002) “so that all New Zealanders, either as individuals or members of communities, have the opportunity to access and effectively use current and emerging information and communication technologies” (ibid., p.5). This type of policy discourse is most often directed at the community level, and the universal access goal is routinely conflated with an objective of creating stronger communities on the assumption that “ICT [information and communication technology] has the potential to facilitate building safe communities and promoting community development” (ibid., p. 5). Causation is implied here but not explained.

How confident can we be that increasing internet access is a boost to social cohesion in low decile communities such as those targeted by Computers in Homes? To what extent will home internet access improve neighbourhood relations, or family and school relations, or create inclusion at a community level? To what extent is there a relationship between internet access and social cohesion? Currently, the relationship is poorly understood. Research aiming to answer these questions could help to show how policy and funding can be most effectively directed towards building stronger communities (Department of Internal Affairs, et al., 2002), for improving educational achievement (Livingstone & Bober, 2005) and democratic participation (Williamson, 2002) through internet access.

Barry Wellman has argued that the internet affords “networked individualism [that] should have profound effects on social cohesion” (Wellman, et al., 2003, ‘E-Citizenship in a Networked Society’ section, ¶15) because “the McLuhanesque ‘global village’... complements traditional communities rather than replacing them” (ibid.) and “even as the world goes wireless, the persistence of tangible interests, such as neighbourly get-togethers or local intruders, will keep the local important” (ibid.). Arguably, networked individualism does not

mean that places and the traditions of community associated with them have ceased to be important, but rather, places are now important in new ways. For example internet cafes, like other public access points such as in libraries, are becoming more important focal points for community (Cartier, et al., 2005) where the excluded may congregate regularly to network on-and offline, and then dissolve away to reconnect with other places, other communities. Wellman's considerable body of work in this area comprehensively illustrates emerging theory that freedom from geography means the individual is becoming the unit of social connectivity. The importance of place ("Connected lives: The new social network operating system," 2009) and of "groups or local solidarities" (Hampton & Wellman, 2003) is said to be receding, and people are now achieving their goals through personal agency afforded by the "triple revolution" ("Connected lives: The new social network operating system," 2009, online broadcast) of personal internet, mobile connectivity, and social networking. Yet they continue to act in concert with others in both the online and offline domains. Wellman argues that an individualised, but networked, world supplies social capital, sociability, information, and a sense of belonging separately to each person (ibid.).

The process set out by Wellman appears to be circular: social capital accrues to individuals, who continue to network, which builds social capital, in a recursive cycle. Thus networks (including those facilitated by the internet) deliver social capital at both the individual and group levels. This principle is a touchstone for the present study. It is reflected in a definition of social cohesion established earlier in this chapter (p. 7) and discussed in more detail in the literature review; it anticipates the findings of the study, and points the way for further research on internet access and social cohesion. The present study explores how this process of increasing social cohesion at both individual and group levels may work when internet access is introduced.

1.3 RESEARCH GOAL

As briefly outlined in the overview of this chapter, the research described in this thesis aims to make a contribution to the field by providing empirical evidence pertaining to the relationship between internet access and social cohesion, by examining how school-based community groups in low decile settings make use of free home internet access provided by a New Zealand scheme called Computers in Homes. In short, the research set out in this thesis concerns the relationship between internet access and social cohesion.

Specifically, the research goal of the present study is to assess *how internet access and social cohesion are related in a free home internet scheme*. Objectives underlying the pursuit of this goal involved the assessment of two propositions:

Proposition 1 (P1): Free home internet access leads to ongoing internet use

Proposition 2 (P2): Internet access is positively related to evidence of social cohesion.

The assumptions behind this goal and the two propositions are fully set out in the introduction to chapter 3.

1.4 STRUCTURE OF THE THESIS

The introductory chapter describes in brief the impetus for and rationale behind the current study. Working definitions of key constructs central to the research are established, while further consideration is given to them in the literature review later in the thesis. The goal of this study is stated: to assess how internet access and social cohesion are related in a free home internet scheme. The specific setting chosen for the research is the Computers in Homes free home internet scheme in New Zealand (refer to Appendix 5).

This chapter is followed by a review of the literature of the digital divide, of community internet studies, and a variety of concepts and terms relating to strengthening community. In addition a field of research and practice called community informatics is reviewed, since the present research is consistent with its goal to combine research and practice in community internet so that research can assist practitioners to evaluate and better position their community internet interventions (Gurstein, 2000).

Chapter 3 explains the development of the research goal, its underlying objectives, and the rationale for a qualitative approach with a multiple case study research design. It demonstrates how the propositions underlying the research goal are operationalised for the purposes of the study, setting out the range of methods used to gather data. The principal method used at each case study site is the in-depth interview with internet users in community group settings, contextualised by observation, interviews among other stakeholders, and document review.

Chapter 4 summarises results generated at Time 1 and Time 2 in two case studies, showing a contrast in outcomes. Principally, the contrast is that in Case A, evidence of stronger social cohesion at Time 1 became associated with more successful internet uptake among the research participants by Time 2, and evidence of increased social cohesion which was not evident at Case B. Implications of these results are discussed in-depth in Chapter 5, while a conclusions chapter synthesises the key outcomes of the study and its contribution to the broader field, recommending features of the Computers in Homes free internet scheme that should be extended and considered as an example by other community interventions, and suggesting implications for further research, policy and practice.

CHAPTER 2: LITERATURE REVIEW

INTRODUCTION

The field of internet studies grew exponentially in scale and scope in a mere handful of years beginning in the late 1990s. It built on a platform of, first, enthralled commentary about “cyberspace” (Barlow, 1994, p. 26) which would be “a new kind of place” (Rheingold, 1993, ch. 2), perhaps a technological utopia (Dunlop & Kling, 1991, p. 14). Next, the first studies of internet use and gaps in access revealed a digital divide in society (Kahin & Keller, 1995; Kraut, Scherlis, Mukhopadhyay, Manning, & Kiesler, 1996; National Telecommunications and Information Administration, 1995; Wresch, 1996). From these beginnings internet research has become prolific. From the perspective of the late 2000s, a vertiginous sense of accelerating change is evident in this field: for example, the now everyday expression Web 2.0 did not exist before September 2004 (Keen, 2007, p. 3); YouTube did not make an appearance until 2005, when even “author-generated sites like Wikipedia... were well-kept Silicon Valley secrets” (ibid., p. 43). Yet only three or four years later “we are watching a hundred million clips a day on YouTube, and MySpace, founded in July 2003, has over ninety-eight million profiles” (ibid., p. 43).

Therefore finding a stable vantage point within the internet studies literature can be likened to an attempt to capture a shifting target, as an internet year has been said to be equivalent to three months, or “like a dog year, changing approximately seven times faster than normal human time” (Bengston, 1989, cited in Wellman, 2001a). The period of planning, conducting and writing up the findings of the present study in New Zealand coincides with rapidly multiplying ways in which the internet has become embedded in everyday life (Wellman & Haythornthwaite, 2002). In 2001-2002 as I planned the study, the digital divide itself was a prominent issue; now, public access points such as internet cafés (Cartier, et al., 2005) and cheaper computer hardware (Kraemer, Dedrick, & Sharma, 2009) are said to have narrowed access gaps across the globe (Atkins, 2005). Once, it was common to read of concerns that the internet increased people’s social isolation (Orleans & Laney, 1997) because it “contributes to an incomplete lifestyle ... as a consequence of turning away from the full range of in-person contacts believed to be part of our daily lives” (Hampton, 2002b, p. 229). Now, social networking software – growing enormously in popularity since 2005 – is arguably helping people to maintain and even increase their networks (Kennedy & Wellman, 2007).

Before 2005, the internet was a repository for information, a “cathedral of knowledge” (Keen, 2007); now, online collaboration and “produsage” (Bruns, 2007) - a new term connoting people’s production as well as consumption of internet content – are regarded as being much more in the hands of users themselves and the online environment is popularly referred to as the interactive web, or Web 2.0.

Yet despite such rapid technological developments, internet research is still in its infancy. Ambiguity persists, for example, about the relationship between stronger community and increased internet access, even in the face of greater potential for activism at community level afforded by new internet applications. These include micro-blogging site Twitter and social networking sites like Facebook that permit people not only to sidestep traditional media, a shift foreshadowed by Howard Rheingold as long ago as 1993, but also to directly influence politics in repressive regimes like Iran (Morozov, 2009). Assumptions about a relationship between internet access and stronger community also underpin social policy agendas such as New Zealand’s Digital Strategy 2.0 (New Zealand Government - Ministry of Communications and Information Technology, 2008) where the assumed connection is explicit:

...sharing and creation of culture and communities online is a powerful incentive for people to gain skills and confidence in the digital world. They can then use these skills for learning or employment, or feed them back into the community. (New Zealand Government - Ministry of Communications and Information Technology, 2008, Vibrant communities and culture – Connected communities section, ¶6)

What is lacking in the policy discourse is a precise identification of how this process happens, and what conditions will optimise it, since research specifically addressing this in a detailed fashion has not yet been undertaken in New Zealand. The present study aims to trace, through case studies, how it is that internet users in community settings come to “feed...back into the community” (ibid.) in the way envisaged by government agencies in the Digital Strategy cited above. As explained in chapter 1 of the thesis and in more detail in chapter 3, the research aim for this study is to assess how internet access and social cohesion are related, using a free home internet scheme as the context. Although meta-analyses of international research on the internet and social capital (Gaved & Anderson, 2006; Loader & Keeble, 2004) have been compiled and some early themes are identifiable, further research over a number of years is required so that governmental goals and community practice can be empirically grounded.

Worldwide interest in an emerging digital divide from local to international levels from the mid 1990s was the key point of interest that prompted me, in 2002, to develop this study. In

doing so I planned to focus on community internet implemented by government as a tactic in “revitalising communities” (Housing New Zealand Corporation, 2007) where social problems such as crime and low levels of educational achievement are an issue. I noticed a prevailing view in both mainstream media stories and opinions (Bacoccina, 2003; Clarke, 2001; Faiola & Buckley, 2000; Stillman, 1996; Twist, 2005; Wakefield, 2005) and in the literature (Cummings & Kraut, 2001; Novak & Hoffman, 1998) that the digital divide could be bridged by increasing internet access. I wondered to what extent the ‘increased access’ approach was successful, and in what ways. In particular, little research on the relationship between community internet schemes and community outcomes appeared to have been done in the New Zealand context, except for – at that time – small scale anecdotal research reported on the Computers in Homes website as it existed in 2001, and still available on the currently available site (“Computers in Homes”, 2007), at the time of writing last updated in 2007, where reports dated 2001 and 2002 are found on a ‘Research’ page.

In this chapter, the fundamental point of interest for the present research in a New Zealand setting – whether internet access and social cohesion are related, and in what way – is explored through the literature on the digital divide and on understandings about what comprises strong community, as well as community internet research to date. These are set against the tension between optimistic and pessimistic views relating to the internet in society that has been present since the mid 1990s and that to some extent is still unresolved.

The idea that society is fragmenting, traditional community ties are dissolving and “siblings, parents, children, aunts, cousins, grade school and high school friends are no longer present daily, and they no longer form the lifelong support and friendship groups they once did” (Nie, Hillygus, & Erbring, 2002, p. 31) is increasingly disputed. Barry Wellman, a vigorous proponent of the view that “community has never been lost”, (Wellman, 1999a, ¶15) continues to assert ten years later that people have “new ways to form communities around themselves and their interests” (“Connected lives: The new social network operating system,” 2009) such as mobile phones and personal internet that allow people to carry their networks with them. Internet use is now much less frequently viewed as an activity that displaces other media or subtracts in some way from everyday life (Wellman & Haythornthwaite, 2002), but rather it facilitates far larger social networks than ever before (“Connected lives: The new social network operating system,” 2009). Thus, a pendulum effect is apparent in the literature, whereby earlier arguments that the internet represented a threat to society (Slouka, 1995) are counterbalanced by claims that the internet helps people to be more socially connected and therefore supported (Hampton & Wellman, 2003).

A resolution of contradictory views about the relationship between the internet and community effects is emerging. If social capital is, as Putnam (2000) has argued, in decline, with a continually widening gap between information haves and have-nots (Grossman, 2007; McConnaughey & Lader, 1998), is it possible that internet use may be managed in such a way that it reconstitutes community (Afnan-Manns & Dorr, 2002)? If this is the case, then research is needed to address the way in which internet use can and should be managed to enable the desired community outcomes. An example of such a constitutive role is the use that can be made of the internet by a community that may also meet offline (such as a neighbourhood, a geographically dispersed kinship group, or an interest group) to create its own content and space online. In this way the online space may complement networks in the offline community. Thus the potential for a positive role for the internet in community life progresses what was until about 2002 a somewhat binary debate.

This chapter aims to show what empirical basis exists for assumptions about the link between internet access and stronger communities, and where further research is required, as a basis for an appropriate research design for the present study in the New Zealand setting. The objective in framing this study is to advance understanding of the relationship between internet access and social cohesion (a key construct introduced in section 1.2 of the thesis) through New Zealand case studies of free internet at home in low decile neighbourhoods. Broadly structured into three sections, chapter two firstly locates the digital divide in social theory, reviews its manifestations in New Zealand and the government's response to it, and explores perspectives on digital inequality. The chapter then differentiates between a number of related terms used in literature on the internet and community, including social capital and social cohesion. Research on the internet and community is reviewed in a third section of this chapter, which also assesses the newer sub-field called community informatics, in which communications technologies are seen as indispensable tools in the creation of a more inclusive society (Gurstein, 2003). These three sections establish the logic of the research design found in chapter three.

2.1 THE DIGITAL DIVIDE

The research described in this thesis came about during a period of rapid social and organisational change facilitated by the rise of internet use, especially in the first years of this century. Ideas about the information age, the network society and social change were

popularised by a number of high-profile thinkers. These include Barry Wellman, a sociologist from Canada noted for his prolific research since the 1960s on social networks (Wellman, 1988, 1999b), the internet and community (Wellman, 2001a, 2002, 1999b), and networked individualism (Wellman, et al., 2003); Manuel Castells, the influential Spanish-born sociologist who popularised the phrase “the network society”, (1997b, p. 1000; 2000b); and William Wresch who identified a new group he called the disconnected (1996), sounding warnings about the causes and consequences of information inequity. Social change, including widening gaps between the information rich and information poor (Wresch, 1996), appeared to be occurring in parallel with rapid expansion of the internet so that we were seeing “the transformation of community from solidary groups to individualized networks” (Wellman, 2001c, p. 227). While the internet has been increasingly integrated into everyday household activities (Wellman & Haythornthwaite, 2002), Castells is concerned that social fragmentation is more evident despite people and institutions being more connected than ever before. In *The Information Age* trilogy (Castells, 1997a, 1997b) he addresses the rise of the network as a structural unit in society, the role of technology in structuring social patterns, and characteristics of this new society such as social inclusion and exclusion.

Nevertheless, networks have always structured human society as “the key feature of social morphology” (Castells, 2000a, p. 5) but Wellman argues that we are simply more aware of it now (“Connected lives: The new social network operating system,” 2009, online broadcast). The principal difference in social networks today is that they are “empowered by new information/communication technologies” (Castells, 2000a, p. 5). A more pragmatic view of the changes in social dynamics brought about by the rise of the internet is that we are seeing multiple “social affordances” (“Connected lives: The new social network operating system,” 2009; Wellman, et al., 2003) in what Wellman calls “the turn to networked individualism” (“Connected lives: The new social network operating system,” 2009, online broadcast). He argues that mobile and personal internet are making it possible for people’s social networks to be far larger than ever before, believing we now manoeuvre in “fragmented, sparsely-knit, permeable and specialised networks” rather than functioning in “encompassing, densely-knit, bounded groups” (ibid.). Taking a more political stance, Castells began to comment on the role of the internet in structuring global activities to the extent that *exclusion* from access to it is a serious problem:

Core economic, social, political, and cultural activities throughout the planet are being structured by and around the internet, and other computer networks. In fact, exclusion from these networks is one of the most damaging forms of exclusion in our economy and in our culture. (Castells, 2001, p.3)

From the mid-1990s “researchers and social critics [were] debating whether the internet is improving or harming participation in community life and social relationships” (Kraut, et al., 1998, p. 1017), and the pendulum of opinion swung between the views of “digiphiles and digiphobes” (Mitchell, 1999, p. 11). Initially a focus of interest was the identification of the divide itself: its characteristics (Haywood, 1995; Maharey & Swain, 2000; McConnaughey & Lader, 1998) and persistence (National Telecommunications and Information Administration, 1998) overlaid with some concern about the possible social implications of the digital divide (McPherson, et al., 2006; Orleans & Laney, 1997) especially for family life (Kiesler, Zdaniuk, Lundmark, & Kraut, 2000), as well as individual personality and psychology (Kraut, et al., 1998; McKenna & Bargh, 2000). Further weight was lent to these pessimistic views by studies from Stanford University’s Institute for the Quantitative Study of Society that underscored the so-called displacement theory that “time spent on the internet is found to have a negative relationship with a number of daily activities ... most notably, time spent on the internet appears to come at the expense of time spent on social activities, hobbies, reading and TV viewing” (Nie & Hillygus, 2002, p. 1). If this is the case, then even those who do use the internet become changed in their interactions with the world.

Some thought we were witnessing the swift erosion of community, “an intensifying process of disengagement with the public sphere and a retreat into the personal” (Bunting, 2000, ¶18), a point of view apparently endorsed by research at that time in which “the more time people spend using the internet, the more they lose contact with their social environment” (Nie & Erbring, 2000, p. 275) and echoed in publications about the decline of social capital in the US (Putnam, 1995a). Those who favoured this viewpoint saw the process to a large extent being shaped by increasing use of media technologies including television (Moy, Scheufele, & Holber, 1999; Putnam, 1995b) and after about 1995, the internet (Nie & Erbring, 2000). However, it is also possible to view this shift as part of a large-scale sociological trend, rather than it being specifically attributable to the internet as “a single social invention” (Nie, et al., 2002):

Much of the social history of the 19th and 20th century is a story about the dissolution of community and family connections — the social support networks that linked individuals to one another and to their communities. It is a central theme among those who study modernity. (Nie, et al., 2002, p. 31)

Whether social relations (when and how we interact with others, especially our families and personal networks) are changing largely as a result of increased use of new media technologies like mobile phones and personal internet, or whether a more complex set of

factors is at play, findings such as those of Nie and Erbring (2000) cited above are increasingly contrasted by studies that show the more people use the internet the more people they know and interact with in their actual neighbourhoods (Hampton, 2002a; Hampton & Wellman, 1999, 2003).

Significant digital inequality had become clear by the mid 1990s as internet use rapidly took root among those who could afford it, but left behind the urban and rural poor (Kahin & Keller, 1995; National Telecommunications and Information Administration, 1995) so that “while a standard telephone line can be an individual's pathway to the riches of the Information Age, a personal computer and modem are rapidly becoming the keys to the vault” (National Telecommunications and Information Administration, 1995, Background section, ¶3). By 2000, in a much more detailed analysis of the digital divide, the National Telecommunications and Information Administration (NTIA) found that while progress towards full digital inclusion was being made in the US, “we are approaching the point where not having access to these tools is likely to put an individual at a competitive disadvantage and in a position of being a less-than-full participant in the digital economy” (National Telecommunications and Information Administration, 2000, 'Conclusion - A look ahead' section, ¶1).

Where social inequality exists, society must meet many costs, such as welfare funding for those unable to participate in the mainstream, individuals sometimes referred to as the socially excluded, the “least advantaged [who] can[not] enjoy ... the choices, chances and power that the rest of society takes for granted” (UK Cabinet Office, 2008). In the context of information and communication technologies (ICTs), and in particular internet at home, digital have-nots are less equipped to be productive members of the workforce in a knowledge economy because they lack the opportunity to acquire computer and internet skills (Maharey & Swain, 2000, ¶4 and 5; New Zealand Government - Ministry of Communications and Information Technology, 2008):

New Zealand's economic performance is held back by our low productivity. New Zealand has comparatively low rates of capital investment and low rates of output per worker. We are all working harder and longer, but not necessarily smarter, than people in most other OECD countries. Increasing our productivity will generate more wealth and increase our international competitiveness, so we can improve our standard of living and achieve our social and environmental goals...Increasing productivity is also about changing attitudes...All New Zealanders will need new skills to participate fully in this digital world... digital literacy and technical ICT skills. (New Zealand Government - Ministry of Communications and Information Technology, 2008, 'High-value economy' section - Smarter through digital, ¶1)

This view arises from an economic rationale that improved digital literacy will facilitate people's contribution to economic growth. In turn, a better performing economy may be expected to generate higher levels of satisfaction and community wellbeing. Governmental discourse such as this implies interventions delivering better information and communication technologies (ICT) access will build stronger community. For example, the Digital Strategy 2.0 asserts "the digital world offers a whole new level of communication and interaction, allowing us to create culture and communities that are both locally grounded and globally connected" (New Zealand Government - Ministry of Communications and Information Technology, 2008, 'Vibrant communities and culture' section) and that people who have acquired digital skills will "feed them back into the community" (ibid.). As Gaved and Anderson point out, "local ICT initiatives are often driven by a belief that they will generate social capital amongst the recipient population, encourage participation and equity, and improve quality of life" (2006, p. 14).

However the New Zealand policy discourse rarely, if ever, explains how the vision of vibrant, locally grounded and globally connected communities is achieved in practice. It may be inferred that a causal role is anticipated for the internet in that it offers the potential to extend social networks and motivate people to be more involved in their community; but if so, this reasoning is not made explicit. By contrast, a more holistic approach to community issues is evident in the UK where a Social Exclusion Unit has been in existence since the late 1990s. The UK view has been that social exclusion is an interwoven set of factors including unemployment, low educational achievement, and digital exclusion (Peace, 2001; UK Cabinet Office, 2008). Social exclusion is thus viewed as a problem requiring "joined-up solutions" (UK Cabinet Office, 2008, 2002 News release section) because it consists of joined-up problems. Lack of access to information (2002), and to opportunities available through education as well as through information and communication technologies (Zappala, 2000) are thought to be significant components of exclusion.

Earlier New Zealand policy discourse seemed to acknowledge the significance of a holistic perspective in the governmental digital divide website (Maharey & Swain, 2000) where, for example, the authors stated

It is easy to think of the digital divide as being simply about providing more computers, and indeed, some programmes overseas have focused on just this. However, there are actually several dimensions to the digital divide, all of which need to be considered in developing policy that is going to close the divide. (Maharey & Swain, 2000, ¶ 5)

At that time, an early data collection stage of policy development in New Zealand, the digital divide was understood as consisting of a number of dimensions; yet as the Digital Strategy came into being (New Zealand Government - Ministry of Communications and Information Technology, 2007), the first version being released in 2004, these nuances seemed to have largely vanished. By contrast, a holistic view is central to the Computers in Homes scheme in New Zealand, which “aims to support low income communities to use ICT to strengthen their education. It is very much about what ICT can do for family opportunity” (“Computers in Homes”, 2007, home page introduction), and collaborates closely with schools so that home internet is complementary to the educational endeavour and is not an isolated intervention.

2.1.1 INFORMATION GAPS

Although this literature review emphasises the mid 1990s onwards, research on the role of information access in social inequity had existed since the 1970s. Knowledge diffusion research (Rogers, 1976) gave rise to the Knowledge Gap Hypothesis (KGH), a tradition in communication research in which information gaps between those in society who have the advantage of education and material resources, and those with lower educational achievement, are seen to be widening. This process is evidently not confined to new media technologies because “historically, new technological infrastructures, such as the railroad system or the national highway system, have tended to serve society’s elite first, and only later have the benefits trickled down to the masses” (Pavlik, 1996, p. 350). KGH studies assessed what tends to happen when information is made available to a population: the higher socioeconomic individuals, being more highly educated and resourced, are able to take up and make use of information at a more rapid rate than those of lower socioeconomic status, who lack the skills to do so (Tichenor, Donohue, & Olien, 1970). Thus the differential rate of information uptake means that those of lower socioeconomic status tend to fall behind and those with better information opportunities are increasingly advantaged over time (Ettema, Brown, & Luepker, 1983; Ettema & Kline, 1977; Tichenor, et al., 1970). Sometimes this hypothesis is more colloquially expressed through the analogy *the rich get richer and the poor get poorer*. This analogy is arguably still applicable in the 21st century, in the context of digital opportunity.

In “digital have-not” communities (Foulger, 2001), the divide has been said to be more like a cliff that must be scaled in increments. The late adopters are forever behind, while the early adopters surge ahead, apparently increasing their lead. An intensification of the digital divide

is a risk if the social context is overlooked or disregarded, a point reflected in increasing agreement among researchers in the field that

...those who have the knowledge and experience gain the most benefit whilst those who lack the skills, knowledge and perhaps self-confidence are left further behind as others have shown ... This is not an issue that will be solved by technology or by policies that focus on penetration and access as opposed to utility, value and social outcomes. (Anderson, 2008, p. 21)

In addition the relative separateness of a group of technology-resistant individuals is reinforced in diffusion of innovation theory, (Rogers, 2003) in which it is predicted that a proportion of a population, possibly either risk-averse or isolated (as for example, socially or economically), remains resistant in the uptake of a technology. Market forces also dictate high costs for technologies when they are first launched, so that the less well off, the less educated, and those lacking interest, constitute a persistent 'tail-end' group. An access gap, such as in the digital divide, is therefore to be expected according to this view. Taking the idea further, efforts to close technology gaps may always be futile, since innovations continually arrive on the market. The strength of diffusion of innovations theory, and its relevance for the present study, is in "its ability to identify, structure, and predict the factors which lead to the diffusion of an innovation" (Vishwanath, 2006b, p. 3) – in this case, the internet, and interpersonal influence which is argued to be a key factor in the adoption of new communication technologies (ibid.). This important point will be re-visited in the context of 'opinion leaders' below.

Another thread in the literature on knowledge gaps and diffusion emerged in the 1970s, with the information poor being characterised as people who were unaware of available information channels, who were heavy viewers of television but seldom read newspapers and never read books, did not define problems as needs for information, were not very active in seeking information, tended towards using formal channels if they had a pressing need, and lived within deficient information networks (Childers & Post, 1975, cited in Severin & Tankard, 1997). Conclusions about information use in that era were obviously partly connected to norms of media consumption and availability, such as the widespread presence of television as a primary source of information and entertainment at that time. The information environment is arguably far more complex now than it was then, with internet use making it possible for people to free themselves from commercial television for entertainment and information, and to satisfy individual interests as well as the need for social interaction online. The key point to take forward from the 1970s research on information poverty is the

implication that information users' sense of their own world, as well as their perceptions of the world beyond, shapes their response and should be recognised as playing an important role in finding ways to address information gaps. Later research on this theme developed the idea of a "life-world" (Chatman, 1996, p. 193) within which the information poor exist, with 1990s research generating hypotheses about characteristic behaviours such as that the information poor are wary of talking about their problems and can be somewhat unwilling to seek or accept help from others (*ibid.*). These ideas echo the concept of habitus (Bourdieu, 1999) that tends to structure our expectations of what is possible in life, and keeps people within their social class. Bourdieu's theories of "habitus" (*ibid.*) and social field are further reviewed later in the chapter (on pages 33 – 34 and 50 - 51) for their relevance in the present research as alternative ways of understanding individual agency in social settings.

- AMBIGUITY AND OPINION LEADERS

Theory of the diffusion of innovations (Backer & Rogers, 1998; Rogers, 2003), and a sub-field of theory on opinion leaders and seekers (Vishwanath, 2006b), is relevant to the dynamics of situations involving technological uncertainty, because novice users endeavouring to engage with and make meaningful use of the internet may find it confusing (Vishwanath, 2006a). As explored in the previous section, the present-day information environment is complex and ambiguous, especially for those with lower educational achievement and fewer resources with which to participate and gain experience. In addition, consumers are faced with seemingly endless choice of media products, rapid innovation, and converging technologies such as mobile phones with internet. There is, quite simply, so much to learn. In an environment such as this, less confident individuals may look to those more expert, or "champions" (Backer & Rogers, 1998) for guidance and knowledge. While the information poverty literature reviewed above suggests that the information poor are somewhat withdrawn and even isolated within their own world, in the context of initiatives to overcome digital inequality, the concept of opinion leadership within a community - "the hypothesis that 'ideas often flow from radio and print to opinion leaders and from these to the less active sections of the population'" (Kelley & Lazear, 1958, p. 423) first established by Paul Lazarsfeld in the 1940s - may be equally applicable to the process of internet uptake.

Whether in the context of public opinion in elections (Robinson, 1976), democratic governance (Roch, 2003), response to print media (Troidahl, 1966), marketing products (Shoham & Ruvio, 2008) or of persuading others of the advantages of a new idea (Burt, 1999), it has been shown that "if the innovation is indeed perceived as relatively

advantageous by its early adopters" (Backer & Rogers, 1998, p. 17) people's attitudes and behaviours are influenced by others who bring the new information to them, in a "two-step flow" (Robinson, 1976, p. 304; Troidahl, 1966, p. 609) process. Thus a new idea moves from media to opinion leaders to the less active members of a population through interpersonal contacts, and "the diffusion of innovations is essentially a social process consisting of people talking to others about the new idea as they gradually shape the meaning of the innovation" (Backer & Rogers, 1998, p. 17).

One of the early findings of two-step flow studies was that "followers will initiate the second-step flow of communication (by asking for advice) if they expose themselves to media content inconsistent with their present beliefs" (Troidahl, 1966, p. 619). Individuals considering "information preferences and adoption" (Vishwanath, 2006a, p. 324) in "novel and ambiguous" situations (ibid.) such as being new internet users are faced with what is described in the literature as "equivocal" (ibid.) technology that "can be interpreted in multiple and potentially conflicting ways" (ibid., p. 324). In this sense they will be receptive to the views of others as they engage with the new medium in a context of uncertainty, and seek social reinforcement as they make sense of their experience with it:

The symbolic meaning of technology is jointly produced through the individual's interaction with the technology and the larger social structure within which the individual is embedded. Within the organizational context, the social structure includes colleagues, co-workers, and subordinates who interact and provide social support. (Vishwanath, 2006a, p. 324)

In chapter 3, a social constructivist worldview is explored in relation to the research design for the present study: those who acquire knowledge do so not only in relation to their prior experience and knowledge, but also in relation to others in the setting (see 'Epistemological assumptions, pages 78 - 79). Meaning for individuals is, here, contextual and socially embedded. In Vishwanath's framework cited above the media technology itself – in this case, the internet – is an uncertain element in the larger process of sense-making that is likely to propel individuals towards the influence of those who seem to know what they are doing. In this way, people learn to make use of the internet through social interaction, seeking reassurance, advice and guidance from others who are more knowledgeable (Shoham & Ruvio, 2008), known as opinion leaders (D. V. Shah & Scheufele, 2006), or champions (Backer & Rogers, 1998).

The presence of an equivocal technology with which most users are unfamiliar is an important consideration in the present study. According to recent research on opinion leaders and

seekers in the context of a number of new communication technologies (including high speed internet, MP3 players, digital cameras, cell phones with a variety of functions, and more), people will look for guidance to their interpersonal networks seeking someone whose opinion they respect, and on whom to model their own behaviours:

Interpersonal contacts mediate the flow of information between mass media and later adopters... interaction between users creates interdependence which increases the utility of the technology for its adopters... Interpersonal influence is a key factor in this process especially since individuals tend to trust the opinion of others more than they do of formal marketer dominated sources such as advertising. (Vishwanath, 2006b, p. 4)

The literature reveals concurrence on the subject of opinion leader characteristics. They tend to be “competent technically vis-à-vis being able to use new high-tech products” (Shoham & Ruvio, 2008, p. 282); they are heavy consumers of the mass media; and they are socially active, self-centred and self-confident (ibid.). Their tendency to be gregarious is related to their wish to interact with those whom they influence. Thus opinion leaders are generally more sociable or companionable. Vishwanath (2006) concludes “technology opinion leaders tend to be more innovative, have a higher need to individuate, and are more competent communicators” (p. 23). Public individuation, “a state in which people feel differentiated, to some degree, from other people and choose to act differently from them” (Misra, 1990, p. 3), is a characteristic only some people are willing to exhibit, while others are reluctant to bring attention to themselves in this way. A further significant point for the present study made by Vishwanath (2006) is that “technology opinion leaders prefer mass media sources while seekers tend to prefer interpersonal sources” (p. 23).

Whether the sense of leadership is latent in individuals and emerges after active experiences of civic engagement, or vice versa, recent commentary suggests that personality strength is an important characteristic of opinion leadership. Shah and Scheufele (2006) cite Elisabeth Noelle-Neumann in identifying

...personality strength - that is, individuals' self-perceived leadership qualities and aptitude at shaping others' opinions – [as] directly relevant to research on political action and civic engagement. She contends that individuals displaying these traits are opinion leaders and, according to her data, show higher levels of engagement in their communities. (Shah & Scheufele, 2006, p. 2)

In these ways, opinion leaders play an important role in social influence. Burt (1999) points out that “opinion leaders as brokers bear a striking resemblance to network entrepreneurs in social capital research” (p. 1). This point brings together two important components of the

present research: the 'brokerage' of knowledge about internet use by strong individuals in a group, and increased cohesion and social capital, concepts that will be explored in section 2.2.2 (pages 55 - 63). Underlining this connection between internet use and social confidence is the view derived from a meta-analysis of community internet research that "those who are socially content, trust others, have lots of people to draw on for support and believe that others are generally fair, are also more likely to be wired" (Loader & Keeble, 2004, p. 29). Thus there is an emerging sense from reviewing the literature that those individuals in a group setting showing high levels of engagement, high sociability and trust, who also tend to be internet users, may function as opinion leaders by having influence among those who are tentative about an equivocal, though compelling, technology and who may prefer interpersonal means of guidance.

2.1.2 THE DIGITAL DIVIDE DEFINED

The concepts of knowledge gaps and exclusion from the advantages of mainstream access to information are very much the precursors of the digital divide, an exclusion paradigm used since the mid-1990s (Hallman, 2004). The digital divide idea has expanded on these foundations by considering the role played by the internet in increasing social disparities. Ironically, concerns about the digital divide have coincided with consensus around the view that globalisation has, in the last few years, caused a worldwide rise in income inequality. On the one hand, the internet has huge potential to "narrow the knowledge gap between developed and less developed" (Stiglitz, 2005, p. 256), therefore narrowing economic disparities, and on the other, it seems that technology gaps are persisting and "the potential costs of globalisation have been vastly underestimated" (ibid., p. 230). Studies of the characteristics of the digital divide in particular settings revealing gaps, for example, on the basis of education, gender, ethnicity and other demographic factors (*Falling through the net: Toward digital inclusion*, 2000), later progressed to a realisation that these are not the only relevant dimensions in internet exclusion. How people connect, for example whether using dial-up or broadband, or whether using the internet in a public access facility or at home, is also a factor to consider in determining how the internet is used, or not used (Davison & Cotten, 2003).

The digital divide was first understood to mean, simply, "the divide between those with access to new technologies and those without [which] is now one of America's leading economic and civil rights issues" (National Telecommunications and Information Administration, 1999, Introduction, ¶1). Larry Irving, the original head of the National Telecommunications

Infrastructure Administration (NTIA) in the US Department of Commerce, in a series of January 2001 e-mails on the US-based electronic mailing list “digitaldividenetwork”, claimed that the term was first used in the *Los Angeles Times* around 1995, and that it was subsequently used formally by the Department of Commerce a few months later, although according to Irving the term did not gain the ubiquity it enjoys today until the release of the third Falling Through the Net report (National Telecommunications and Information Administration, 2000). President Bill Clinton and Vice President Al Gore began to popularise the phrase in 1996 (Carvin, A., 2001, in Hallman, 2004).

Thus out of the knowledge gap tradition came a newer paradigm for the digital era, the digital divide, defined as follows in 2001 by the Organisation for Economic Cooperation and Development (OECD):

With the emergence of digital media, the hypothesis re-emerged under the term of the “digital divide”, here defined as “...the gap between individuals, households, businesses and geographic areas at different socio-economic levels with regard both to their opportunities to access information and communication technologies (ITs) and to their use of the internet for a wide variety of activities”.
(Husing & Selhofer, 2004, p. 22)

Ultimately the term digital divide gained traction in the popular and policy imagination by the late 1990s, and it has endured in the years since as a readily understood metaphor highlighting the gap between those who have access to and use the internet and those who do not. Perhaps a broader question of some significance, now being posed by digital divide scholars, is whether or not the divide is an issue, and who should structure the ‘solutions’? (Ganesh & Barber, 2009).

2.1.3 THE DIGITAL DIVIDE AND AGENCY

Another definition for the digital divide, “the differences in lifestyles between individuals who are using the new information technologies versus the lifestyles of individuals who are not” (Rogers, 2000, p. 78) puts more emphasis on the experience of having no access, highlighting relative advantage in the way of life of those who are internet users. Other terminologies in this category denote a concern about inequity and social justice: people are either “information haves” or “information have-nots” (Haywood, 1995); and the state of being in or out of the divide is either “digital connection” or “digital division” (Maharey & Swain, 2000). Extreme forms of the metaphor exist in images of “digital apartheid” (Faiola & Buckley, 2000) and “digital ghettos” (Slouka, 1995). These terminologies allude to

exclusion and lack of agency, highlighting a passive role for those not included in the mainstream information society (Webster, 2002). Arguably therefore academic and policy discourse has the potential to objectify the individuals and groups affected. Perhaps seeing exclusion inherent in the language, Computers in Homes ("Computers in Homes ", 2007) and others (Eubanks, 2007; Jarboe, 2001) now prefer the phrase "digital opportunity" rather than digital divide. The way the digital divide is described therefore varies according to particular frames of reference.

Framing of research is determined in one sense by our ontological and epistemological assumptions: how is reality determined, and how is one's view of it constructed? For example if one views the digital divide as an issue that largely affects those who are already socially excluded in a variety of ways, that 'social exclusion' framing represents a mainstream view of the 'other'. A social exclusion frame recognises that a proportion of individuals exist outside the norms of the mainstream. Thus it is premised, on the one hand, on positivist assumptions about reality – that it is "singular, a priori, and objective" (Lindlof & Taylor, 2002, p.8); and, on the other hand, assumptions about knowledge – that it "arises from observation of empirical phenomena that form the tangible, material traces of essential reality" (ibid., p. 8). Action on the basis of this framing is likely to focus on objective assessment of comparative deficit in relation to mainstream advantage, and to lead policy makers and practitioners toward interventions that will make the excluded more nearly fit the norm. This normative frame may take little account of the viewpoint of the excluded themselves (Ganesh & Barber, 2009).

Alternatively a "post positivist" (Denzin & Lincoln, 2000, p. 20) ontology recognises that "realities are plural...[and] socially constructed" (Lindlof & Taylor, 2002, p. 11). In addition "meaningful realities are emergent, collaborative, and symbolic in nature" (ibid.), and

Knowledge of social realities emerges from the interdependence of researcher and researched...Knowledge claims are inevitably positioned and partial. As a result, researchers should reflect on and account for the contingencies of their claims. True knowledge is gained through prolonged immersion and extensive dialogue practiced in social settings. (Lindlof & Taylor, 2002, p. 11)

The discourse of divides, gaps, haves and have-nots, insiders and outsiders, inclusion and exclusion tends to be binary in its logic, to polarise groups in society, and to objectify those affected. For example, labels like these may lead to strategies that are counter to the needs and interests of the excluded who may view their situation in a totally different way (Eubanks, 2007) to the institutional approach of exogenous (Gaved & Anderson, 2006) agencies aiming

to close the gaps. Digital divide metaphors reflect the claim about positivist communication research that it reduces complexity in order “to clarify...underlying structures and isolate the existence of (and relationships between) specific elements” (Lindlof & Taylor, 2002, p. 8). This reduction process has pointed the way to structural solutions to the digital divide – of bringing separate pieces together, of closing the gaps between separated parts as identified in large scale statistical studies (National Telecommunications and Information Administration, 2000). An apparent favouring of this paradigm in the digital divide arena interested me around the time of planning the current study in 2001, for a structural response to a social issue seems fraught with difficulty, while a shift toward the viewpoint of the excluded and the notion of plural realities seems more likely to lead to useful research outcomes. Literature from about 2002 onwards began to endorse this type of shift, as will be illustrated in section 2.1.4.

In a related point, Peace (2001) argues that “social exclusion” is essentially a label or category. Through a process of reification, the concept has lost the element of agency, and thus an important question is implied - who does the excluding, who is excluded, and from what are they excluded? Peace therefore highlights the significance of agency: the matter of who takes an active role in defining problems and resolving strategies for change can have far-reaching effects. This is similar to a point made by Gaved and Anderson (2006) in their use of the terms exogenous and endogenous, distinguishing between the probably rather different understandings of external agencies and local people of the community issues in question.

As with ‘social exclusion’, a reified ‘digital divide’ depersonalises the internet question, and focuses our attention on the gap rather than the people affected and their role in responding to it. In a critique of the New Zealand Digital Strategy, Graham (2007) also underscores the importance of framing for the digital divide:

The main problem I have is that ... the NZDS... [gives me no] sense of where the New Zealand focus for community informatics as a practice, or community-based communications initiatives, resides, or even if there is such a focus. And yet, it seems to me that the success of the NZDS will depend on the degree to which policies largely internal to government reflect a consensus that has been reached, or may be reached, in the public sphere. My question then becomes – who gets to tell the story of community networking in New Zealand? (ibid.)

This is an important, if rhetorical, question. Clearly Graham implies that in the New Zealand Digital Strategy context, the policy and solutions have not emerged from the community itself, and the implicit message is that they should. There is now strong consensus in the literature

that community ownership of community internet schemes is vital for their success and longevity (Gaved & Anderson, 2006). More on the topic of ownership is reviewed a little later.

Looking beyond the notion that framing shapes our response to social issues like the digital divide whether we are researchers, policy-makers or practitioners, we can also consider larger social forces which may affect the extent to which people are able to escape their social circumstances. Sociologist Pierre Bourdieu's concept of social fields and social reproduction extends the significance of agency in studying digital divide problems, and foreshadows discussion in the next two sections about outside-in solutions and power relations. Bourdieu thought that people do not live their lives according to freely made choices or possess a unified identity as individuals as such, but rather that they are subject to external structures and influences (Reed-Danahay, 2004, p. 23). A structural mechanism for this process is the concept of the cultural or social field (*champs*), for example the fields of law or education, which have their own rules and structures, and cultural capital. We live our lives within the influence of a series of these fields.

Additionally, one's point of view is shaped by what he called *habitus*, a personal frame of reference involving a sense of one's milieu and the expectations and possibilities embedded in it that tend to determine our future. Bourdieu saw that 'habitus' and 'field' structure a process of social reproduction in society, so that people find it difficult to escape their social class, as the larger forces tend to simply perpetuate the conditions, choices and opportunities that are available to them (Bourdieu, 1999; Fowler, 2001):

Bourdieu's distinctive approach shows how structures are meaningfully incorporated into agents' most deep-rooted dispositions in the form of unanticipated outcomes over time. Perceived outcomes direct psychological investments and govern expenditures of energy in the broadest sense – in turn reinforcing or further weakening existing structures. (Fowler, 2001, p. 316)

While Bourdieu's theory of social action is arguably somewhat rigid and monolithic because it ascribes little agency to individuals to step outside of their *habitus*, Reed-Danahay (2004) observes that in his own life, Bourdieu escaped the limited possibilities represented by his *habitus*, becoming a revered intellectual. He had argued, according to Reed-Danahay, there are "exceptions to the rule" (ibid., p. 36) of social reproduction "[these being] individuals who, like him, seize opportunities presented to them. This certainly affords some social agency to the individual" (Bourdieu, cited in Reed-Danahay, 2004, p. 36).

Further, Bourdieu commented that, in his own case,

I don't have to tell you that many things that have played a determining part in my "intellectual path" happened by chance. My own contribution, doubtless linked to my habitus, consisted essentially in making the most of them, to the best of my abilities (I think for example, that I seized on a great number of opportunities that many people would have let go by). (1990, cited in Reed-Danahay, 2004, p. 35)

Thus social reproduction is not inevitable in the case of certain individuals who are able to make best use of the social capital (see section 2.2.2) of their habitus, and the opportunities provided by education. In some sense, Bourdieu implies there are individuals who have what it takes to be strategic about possibilities presented to them, to have agency, to take the codes and modalities of a particular field (such as computers in education) and create new codes and practices. In later chapters I consider, on the basis of the results in the present study, whether such individuals have something in common with opinion leaders (section 2.1.1, page 26 - 29) in a socially cohesive setting.

2.1.4 OUTSIDE-IN SOLUTIONS

Arguably the binary logic of a digital divide also lends itself to 'outside in' solutions supplying access, although some researchers now talk less of haves and have nots and prefer shades of meaning such as the have-less (Cartier, et al., 2005; Qiu, 2009), so that a less polarised concept of relative engagement or disengagement with the internet is implied. Nevertheless literature from approximately 1996 to around 2002 framed digital exclusion as principally about access. For example a study of differences between white and African Americans (Novak & Hoffman, 1998) came to technologically determinist conclusions about the digital divide, such as "ensure access and use will follow" (ibid., p. 10). If one adopts a "commodity focus" (Eubanks, 2007, 'Critical ambivalence and critical theory' section), "examining the 'supply' side of the debate" (Ganesh & Barber, 2009, p. 855), then the goal of universal inclusion in the information society is a straightforward matter of wiring up schools, and putting more computers into more households, public meeting places and the like.

However, agreement has grown that the technology itself is only part of the solution. William Wresch pointed out well over a decade ago that even people who ostensibly have the advantage of technology and information access are not necessarily able to make effective use of it (Wresch, 1996) for the simple reason that a variety of factors affect people's ability to step out of information poverty, such as their literacy and motivation. Lisa Servon (2002)

concurs with this view, arguing that a redefinition of the digital divide is required. In her view, factors such as IT literacy and relevance of content (ibid.) should be considered in addition to access, because a focus on access is limiting. Bruce Bimber (1998) thought that people's attitude can also be significant, in his analysis of how the internet might affect the political process, for "it is not simply the availability of information that structures engagement; it is human interest and capacity to understand many complex issues" (ibid., p. 5). Ramifications of this hypothesis, if true of whole populations, include for example, "how can we talk about the internet's effect on political participation if a user does not possess the skills to find political information? Similarly, how can the internet prove to be a useful link between the government and citizens if people are unable to find official documents online?" (ibid., p. 5).

Thus the early to mid 2000s saw the emergence of new perspectives on a digital divide that had previously been viewed normatively – that it should be addressed by increased access that could be structured by external agencies. The new, emerging perspectives highlight a wide variety of factors that influence internet uptake, and multiple ways in which people use the internet (Norris, 2001). In concluding "it is not enough to wire all communities and declare that everyone now has equal access to the internet", Eszter Hargittai (2002) argued for attention to be paid to people's online skills, as she had found "a second-level digital divide exists relative to specific abilities to effectively use the medium" (Hargittai, 2002, 'Conclusion' section, ¶12) among a random sample of internet users. Additionally, even the interpretation of data gathered in a US Department of Commerce report purporting to show a narrowing of the digital divide was questioned at this time (Martin, 2003) in a paper re-analysing the same data to show "internet use may actually be spreading less quickly among poorer households than among richer households" (ibid., p. 1). Little was certain in these years other than that "it becomes less useful to merely look at binary classifications of who is online" (Hargittai, 2002, 'Refining the current approach' section). Thus "rather than normalize the digital divide, scholars and practitioners should problematize it" (Ganesh & Barber, 2009, p. 869).

A somewhat more inclusive and therefore, for its time, progressive approach to digital divide thinking was reflected in the New Zealand government's initial foray into the issues, with the release of its "Closing the digital divide" website (Maharey & Swain, 2000). The authors of the report endeavoured to address a broad range of relevant factors including physical access, ICT skills and support, and content (ibid., 'Summary of existing information' section, ¶15), all of which were being highlighted in the literature at that time. "Content" was explained as "can people see content online that is relevant to them, or takes into account their particular needs?" (ibid.). As Bimber (1998) had done previously, this report reminded

readers of the role played by people's attitude: "do people have a favourable attitude towards ICT, and can they see the relevance and the possibilities it holds for them?" (ibid., Introduction, ¶15). In this way the earliest governmental deliberations on New Zealand's digital divide seemed to lean towards an acknowledgement that physical access to the internet is but one of many relevant considerations and that even access consists of two components: adequate network infrastructure, and affordability.

The view most commonly expressed in the literature now, in a shift from those of the early 2000s, is that "many of the efforts to ameliorate inequality in the information economy grouped under the rubric of the 'digital divide' were misguided, both empirically and practically" (Eubanks, 2007, ¶1) because of the error of focusing on access. Eubanks views this erroneous approach as an ideological incongruence, "an effect of the mismatch between the lived reality of low-income people's interactions with information technology and the normative solutions suggested by ICT policy and activism" (Eubanks, 2007, 'Background: The digital divide' section). In effect Eubanks prioritised low-income women's experiences of technology in her research design, and in working directly with these women to uncover their feelings about using computers found that they disliked the idea of a "bridge" over the digital divide. They preferred to think of technology as a way for people to create a networked interface connecting numerous nodes, instead of a bridge that can only connect two points (ibid.). They "offered alternative solutions that leveraged technology and diverse local knowledges [sic] to build networks based on truth, trust, reciprocity, and reconciliation" (ibid., 'Alternative Articulations: Revisioning Digital Equity' section). A re-positioning of the digital divide so that the user is recognised as engaged in an intersubjective social context is a long way from the earlier outside-in approaches focused only on internet access.

2.1.5 POWER RELATIONS AND COMMUNITY INTERNET

In reflecting on the adequacy of an outside-in perspective on the digital divide in which the focus of attention is technology access, the idea of power relations is implied. If certain individuals and groups are considered to need technology access, a range of questions may be asked. What need, and whose need, is being served in the democratisation of internet access? Who has identified the need? Whose interests are being served? For example Mossberger and colleagues (Mossberger, Tolbert, & Stansbury, 2003) write that we could also consider a democracy divide, or a skills divide, as well as an access divide. Bernard Luyt asks "what makes the digital divide so worthy of attention?" (Luyt, 2004, Introduction, ¶13) and

argues that there are groups in society such as those he describes collectively as representing “information capital” (ibid.) who have an interest in promoting the digital divide issue.

If the answers to the questions posed above are ‘the user’ or ‘the citizen’ or ‘the community’, then the proliferation of community technology initiatives around the world aiming to include those currently on the periphery of the information society is a positive thing. However, answers to questions of justice, access and participation in the digital era depend to a large extent on how the questions are framed: if the digital divide is addressed from within a capitalist world-view where universal internet access is rational and desirable, described as the “commodity focus of many government efforts” (Eubanks, 2007), then arguably we run the risk of being “caught in the headlights of infologic ...as though we have met the man with the proverbial hammer to whom everything looks like a nail” (J.S. Brown & Duguid, 2000, p. 19). An element of risk exists that internet expansion could be driven largely by corporate interests primarily aiming to maximise commercial rather than social value. Corporate interests may lack consideration of the community that is supposed to benefit.

This issue of control, or perspective, or power, has begun to surface in the community internet literature. Control and ownership may be exerted by a range of agencies including “the host community ... endogenous or grass roots initiatives; a partnership of stakeholding organisations; [or] an external body ...what we term exogenous initiatives” (Gaved & Anderson, 2006, p. 6). Gaved and Anderson (ibid.) believe the differing perspectives and agendas of these groups will have a range of effects on project success and sustainability, commenting that at times project ownership can be blurred. The current view is that “endogenous” initiatives (ibid.) are likely to be more sustainable (Williamson, 2003) in the sense of having continuity into the future - because the endogenous framework addresses the digital divide as one component in a range of community issues. Eubanks (2007) and her research subjects, who she calls her “collaborators”, believe the digital divide must be “re-imagined and renamed” as a “people divide [because] participation, action, and collaboration is the only route to the openness and respect that makes communication across difference possible” (‘Alternative articulations’ section). Community members themselves are able to make use of digital tools not only for achieving educational and economic parity with the mainstream, but also to determine content and representation of their views and local issues.

In sum, a top-down view tends to take a deficit orientation in which the digital divide is an access or commodity problem, but it may overlook the ability of the community to mobilise and find its own solutions.

2.1.6 INTERNET TRANSIENCE

Moving on now from issues of structural inequality to what happens when people do have internet access, a critical point in terms of community participation and empowerment is the extent to which policy makers and practitioners can expect new users to become long term users, and therefore the extent to which the benefits of a community internet scheme are likely to be sustained. In the 'Chimera' studies at Essex University, based on longitudinal interview-based data from the UK and Europe, the term 'churn' is used to describe the process of turnover in the internet user population in the sense that "gaining ICT access is not a one-way street" (Anderson, 2004, p. 1) and those using the internet may be "passing by, passing through, and dropping out" (ibid., p. 1). Behind the apparent diffusion of ICTs lies "around 10% per annum internet dropout rate in the USA" (ibid., p. 5); thus the online population is in a continuous state of flux.

The term 'churn' is borrowed from the marketing sector to denote the transitory nature of a customer base as a description of a type of "stop-start" use (Merkel, 2003), and should more correctly be used to describe customers switching between telecommunications or internet companies, as opposed to customers opting out of internet service altogether. Stop-start internet use is a recognised phenomenon that should be addressed. Other ways to describe this process include the idea of "discontinuance" (Rogers, 1995, cited in Wellman & Haythornthwaite, 2002, p. 18), as well as describing reluctant users as, for example, "digital refuseniks" (Wakefield, 2005). Whatever term is used, the relatively unstable internet connectedness that appears to be a factor within late technology adopter, low income populations implies that measurement of internet use or access at particular points in time, for example, may be unwise. People's use may be transient, or individuals may become internet dropouts for all sorts of reasons. Understanding these dynamics of transience is vital in the context of sustaining internet use in a community setting.

These nuances in the study of the digital divide are important because if the distinctions between different user responses are not recognised or understood, somewhat subtle readings of the research can result. For example, an apparent rise in the percentage of households with internet access can lead to misleading conclusions, such as that the digital

divide is shrinking, and that all the assumed social and economic benefits are accruing. This belief is not universally shared. A 2005 media release announcing that the World Bank believed the digital divide is “narrowing fast” (Atkins) brought strong objections from the Digital Divide Network, an electronic mailing list consisting of internet and community researchers and activists. Even the most basic assumptions about whether household internet is required in order to transform communities are up for challenge:

Even if it were possible to wave a magic wand and cause a computer to appear in every household on earth, it would not achieve very much... Rather than trying to close the [digital] divide for the sake of it, the more sensible goal is to determine how best to use technology to promote bottom-up development. And the answer to that question turns out to be remarkably clear: by promoting the spread not of PCs and the internet, but of mobile phones. (Atkins)

Thus, not only do we know internet use can be transient, questions are also being asked about whether addressing digital exclusion by emphasising computers in the residential home is the correct approach. It may be that this premise should be re-examined, because better alternatives may exist, such as public access points. The gains to be expected from home computer access remain disputed (Cordes, 2004; Cordes & Miller, 2003; Orleans & Laney, 1997), with claims for both significant social benefits, particularly educational ones (Prensky, 2001; Zardoya & Fico, 2001) being countered by more recent research arguing for example that “mere availability of computers at home seems to distract students from effective learning” (Fuchs & Woessmann, 2004, p. 359). Assumptions persist that a computer at home is vital for education and opportunity, while other research points out

While education and learning represent the ‘approved’ uses of the internet – the reason why parents and governments invest in domestic internet access – children and young people themselves are far more excited by the internet as a communication medium. (Livingstone & Bober, 2004, p. 413 - 414)

In sum, internet connectedness may be unstable, with some users being ‘transient’, while some researchers still question the value of computers in the home for educational reasons.

2.1.7 BEYOND UBIQUITOUS INTERNET

As shown in 2.1.4, the focus on ‘access’ as a digital divide solution had begun to change from the late 1990s but in particular from around 2002. Gurstein (2003) and many others in this period of two to three years (Afnan-Manns & Dorr, 2002; Crump & McIlroy, 2003; Davison & Cotten, 2003; DiMaggio, Hargittai, Celeste, & Shafer, 2004; Fragoso, 2003;

Hargittai, 2002; Merkel, 2003; Mossberger, et al., 2003) began to argue for a move beyond the universal access approach, since

What is needed is both access (bridging the DD) but also the means for using technology in an effective way to respond to real crises in health care, education, economic development, and resource degradation. For these issues to be successfully addressed through the use of ICTs, attention will need to be paid not simply to "access" but also to an entire range of supports for "effective use". (Gurstein, 2003, 'Conclusion' section, ¶1)

Scholars differ in their perceptions of how wide a view we should take in seeking to consider 'access' as just one of a number of dimensions of the digital divide. Eszter Hargittai suggests a range of factors at the level of "social ties" (in Howard & Jones, 2004, p. 258) influencing people's lack of engagement with the internet, directing our attention for example to people's limited ability to locate online content even when they do have access, and the presence of children in the household. From this perspective digital divide strategies should take account of the social relationships context. Other writers view the digital divide from the perspective of belief systems that may determine particular responses to the digital divide. Fragoso argues, for example, for a repositioning of the debate by pointing to the closed beliefs arising from inclusion policies themselves, since dominant groups may be perpetuating oppressive power structures (Fragoso, 2003).

David Trend also broadens the scope of analysis to address the role of business and corporate forces in capitalising on "the potential for education as a market" (Trend, 2001, p. 3) commenting that "[the] rhetoric constitutes yet another way in which cyberspace is credited with utopian powers to generate insight, connectedness, and prosperity, while allowing us to forget or deny the forces that mitigate against equality, community and social justice" (ibid., p. 12). Among other reasons to be sceptical about utopian claims for a ubiquitous internet, it can be used as an instrument against individual civil liberties by organisations and governments, and "harsher critics of virtual communities say they actually damage people's sense of community by diverting attention from social problems in the material world" (ibid., p. 13). Trend's critique arises from fundamental questions about the role of multinational corporations in "the essentially expansionist character of the capitalistic enterprise" (ibid.) of technological society, which leads inexorably to exploitation of vulnerable markets such as poor communities and less powerful populations. Thus although consensus has emerged that internet access is only a first stage in digital divide solutions, opinions vary about the levels at which the issues should be addressed – at local, social ties level, or at systemic and societal levels of politics and ideology.

For Herring (2004), the time for debate is past: we should accept internet ubiquity as desirable, and get on with inquiry about its integration with the everyday. Computer mediated communication (CMC) is “becoming mundane and ordinary” (ibid., p. 27), and outdated assumptions about communication technologies shaping social behaviour in predictable ways should rather be replaced by the much more subtle question “under what circumstances, in what ways, and to what extent ... does technology shape communication?” Herring argues for a more contextual and user-oriented perspective on technology and communication. In other words, she is a ‘soft determinist’, acknowledging CMC has effects, but that these vary according to circumstances and people’s goals. The present study set in *Computers in Homes* in New Zealand takes an epistemological cue from Herring’s key question above, a point that is expanded on in a rationale for the research design in the introductory sections of chapter 3.

The *Computers in Homes* study was conceived and conducted in New Zealand during 2003 - 2005, a period of time when digital divide researchers worldwide were moving towards more nuanced understandings of how information and technology gaps should be resolved. By 2005 the NZ government had implemented a policy platform, the Digital Strategy (New Zealand Government - Ministry of Communications and Information Technology, 2007) which came in for critique because it asked us to accept “‘connection’ as ‘access to affordable, high speed networking’ is an ‘infrastructure’ problem, not something to do with human communications and relationships” (Graham, 2007, ¶10). Graham’s critique was prescient in light of the release of the upgraded Digital Strategy 2.0 (New Zealand Government - Ministry of Communications and Information Technology, 2008) which continues to be characterised by a focus on infrastructure. Nowhere in this policy is it evident to what extent the assumed connection between digital infrastructure and social cohesion is either valid or based on empirical evidence. The Digital Strategy 2.0 prefers to allude to this connection, such as in the claim that “digital technology can strengthen small communities” (New Zealand Government - Ministry of Communications and Information Technology, 2008, ‘Connected communities’ section, ¶3). The rationale offered is that this process happens by the internet “linking them to larger centres” (ibid.).

2.1.8 THE DIGITAL STRATEGY IN NEW ZEALAND

The New Zealand government’s position on digital divide issues will now be reviewed in light of its Digital Strategy that evolved from 2003 to 2005 and exists now as an upgraded Digital Strategy 2.0.

Justifications for community internet initiatives are often linked to a belief that they will generate economic capital – “ensur[ing] we use digital technology to increase productivity across our economy” (New Zealand Government - Ministry of Communications and Information Technology, 2008, 'High-value economy' section) - while economic disadvantage may accrue to individuals who do not use computers in the workplace (Haisken-DeNew & D'Ambrosio, 2003). Thus various strategies over recent years in New Zealand have attempted to make the internet accessible to as many people as possible. The process began about ten years ago, as subsequent paragraphs will show, with identification of what characterised the digital divide in the New Zealand setting.

International benchmarking shows that while the internet population became more heterogeneous and inclusive, resembling the population as a whole (Rainie & Packel, 2001), and a trend towards “domestication” of the internet (Habib & Cornford, 2002, p. 159) was noted as diffusion of the internet began to narrow the digital divide, gaps in access persisted, characterised especially by ethnicity, income, and education differences. In 2002 Lisa Servon noted “in virtually all countries, internet users tend to be young, urban, male, and relatively well educated and wealthy” (2002, p. 1), a trend borne out in New Zealand where statistics showed in the early 2000s that

Groups most likely to be disadvantaged ... are: Māori and Pacific Island peoples, those on low incomes, sole parents, older people, people with low or no qualifications or poor literacy, the unemployed or underemployed, people in areas lacking a sound telecommunications structure such as rural areas, women and girls, and people with disabilities. (Maharey & Swain, 2000, ¶4).

The New Zealand government’s response at this time was to view the digital divide as a problem of household access, stating “policy possibilities that could be investigated to overcome financial barriers to access [include] providing in-home access to low-income families ... the Ministry of Education has contributed to a Computers in Homes pilot project already” (Maharey & Swain, 2000, ¶145) on a December 2000 website dedicated to an extensive collection of digital divide data. Yet the website acknowledged on its opening ‘page’ (ibid., ¶5) the fact that there is a variety of *other* factors contributing to the divide, saying

It is easy to think of the digital divide as being simply about providing more computers, and indeed, some programmes overseas have focused on just this. However, there are actually several dimensions to the digital divide, all of which need to be considered in developing policy that is going to close the divide... (Maharey & Swain, 2000, 'Summary of existing information' section, ¶5)

At this point, the factors listed - apart from physical access to ICT (including both infrastructure and financial aspects) - were ICT skills, support, attitudes and content. In spite of this acknowledgement in 2000, the Digital Strategy policy document that appeared in 2005 came to focus on internet access, and principally broadband infrastructure.

Against this background, a “Knowledge Wave” conference was held in New Zealand in 2000, and although subsequently panned as a “talkfest” (Tindall, cited in Griffin, 2007, ¶12) and “very little eventuated from it” (Griffin, 2007, ¶13), it is an example of an increased focus on knowledge economy discourse in the Labour-led government’s policy development. Although access to the internet among all groups in New Zealand had dramatically improved from 42% of the population in 1998 to 72% by 2001 (Ministry of Economic Development, 2002, ¶2.2), pockets of poor access persisted, such as in low socio-economic suburbs where poor educational attainment and high unemployment featured. During this period the government began to acknowledge, and make policy statements about, the need for New Zealand to catch up with other developed countries in ICT access and skills:

New Zealand has not had an organised strategy to close the digital divide in the same way that other developed countries, such as the US, the UK, Canada and Australia have. All of these countries have accepted that in the information age, people without ICT access and skills may be left behind very quickly, and have taken action to close the divide. New Zealand is clearly behind in this race. It is crucial that New Zealand makes immediate efforts to catch up, at the very least because the e-commerce and e-government strategies depend on a having a “critical mass” of e-literate citizens. (Maharey & Swain, 2000, ‘Conclusion’ section, ¶246-247)

This strategy, spelt out in more detail later in a “Connecting Communities” report (Department of Internal Affairs, et al., 2002), was presented as a means of “restoring trust in government and providing strong social services... [and giving] greater access to government and government services” (ibid., p. 5). The Connecting Communities document emphasised the importance of communication technologies for “social connectedness” (p. 3) throughout, on the basis that “a modern cohesive society is an essential building block for a growing and innovative economy and society...people who feel socially connected also contribute towards building communities and society” (Department of Internal Affairs, et al., 2002, p. 3). A valuable point, hinting at the motivations of such public policy discourse, is made by Postill (2004) in commenting on the use of the word ‘community’ in the public arena. He notes that the term has “strong emotional resonance [which] makes it an ideal choice in public rhetoric, even though its empirical referent is seldom specified or, indeed, specifiable” (p. 415).

Nevertheless, the Connecting Communities strategy document (Department of Internal Affairs, et al., 2002), an important milestone on the way to the subsequent Digital Strategy (Ministry of Economic Development, et al., 2004), described a significant role for “local government, the philanthropic, voluntary and private sectors, and ...communities” (Department of Internal Affairs, et al., 2002, p. 4) themselves in closing the digital divide. The basis of this expectation was that improving community access to ICT² is “a shared responsibility” (ibid., p. 8). Key principles of government strategy at this time, again foreshadowing the 2004 Digital Strategy to follow, included an explicit emphasis on partnership, community initiative, and government funding being limited to “kick-starting projects that the community can own, and ...in the long term ... [be] funded by non-government sources” (p. 8). A hands-off position was clear: “the government should not directly provide resources or services itself where other organisations can provide more innovative, flexible and effective solutions” (p. 10).

Aiming to coordinate the range of digital divide-related policies available to that point, the government began a process of community consultation based on a draft Digital Strategy (Ministry of Economic Development, et al., 2004) launched in June 2004, with a view to receiving submissions and presenting a final document to Cabinet for sign-off in October 2004. This draft policy document envisioned universal access to the benefits of “the power of ICT to harness information for social and economic gain” (ibid., Foreword, p. iii) over the following several years “to create a society where ICT empowers everyone to create, access, utilise and share information and knowledge, enabling individuals and communities to achieve their full potential” (ibid.). An ambitious agenda included completion of Project Probe, a provincial broadband extension project aiming to ensure that all schools and their surrounding communities had access to broadband by the end of 2004 (ibid., p. 38). Within this broad, pan-ministry Digital Strategy, a number of small-scale schemes intended to close New Zealand’s digital divide were endorsed, with government-funded initiatives such as Computers in Homes being viewed as a means to “seize the opportunities for increased prosperity and *greater social cohesion*³ that the effective use of the tools of ICT can deliver” (Ministry of Economic Development, et al., 2004, Foreword). A very clear assumption here is that social cohesion is an outcome of ICT access, which can be understood as a technologically determinist belief in which “societal effects [are] attributed to intrinsic features of technology” (McQuail, 1994, p. 87).

² ICT is the government’s preferred inclusive term, rather than the internet. I use ICT where that term is used by the source. See ‘Key constructs’ in chapter 1 of the thesis (page 8).

³ My emphasis added

A focus on access is not only found in policy documents. The Computers in Homes website in an early report on its activities refers to the “technologically destitute” (“Computers in Homes Progress Report 1,” 2000, p.5, Section 3) and that “access to internet connection in the home is the key to bridging the digital divide” (ibid.). Computers in Homes aims to “provide access to ICT and the internet to all families in Aotearoa New Zealand” (“Computers in Homes”, 2007) and “to support low income communities to use ICT to strengthen their education” (ibid.). However the organisation is careful these days to distance itself from any inference that it is primarily an access model, stating emphatically that it is not “a hardware dump” (ibid.).

This section of the literature review has shown that universal internet access became a policy and strategy priority for the New Zealand government between 2000 and 2005, and positive social outcomes of internet access such as social cohesion appear to be not only implied but assumed and declared.

2.1.9 PARTNERSHIP FOR DIGITAL INCLUSION IN NEW ZEALAND

With the implementation of the Digital Strategy reviewed in section 2.1.8, the New Zealand government began to present digital inclusion as a tripartite framework of “integrated areas of action” (Ministry of Economic Development, et al., 2004, p. 3) relating to economic productivity as shown in Figure 2-1 below. This framework for addressing the digital divide foregrounds a role for the voluntary and community sector, alongside business and government, an approach described in the Digital Strategy document as “the joined-up, partnership approach” (ibid., p. 2) in achieving digital inclusion. David Cunliffe, at that time Minister for Information Technology and Communications, asked readers to “think of the Strategy as a vote of confidence in the ability of local government, economic development agencies, and others to form partnerships and get active at the local level” (ibid.). The Digital Strategy emphasised the integration of three “enablers” of connection, confidence and content as the means by which a higher-performing economy and more inclusive society could be achieved because “government, business, and the communities are the agents of change and their initiatives all impact upon each other” (ibid., p. 10).

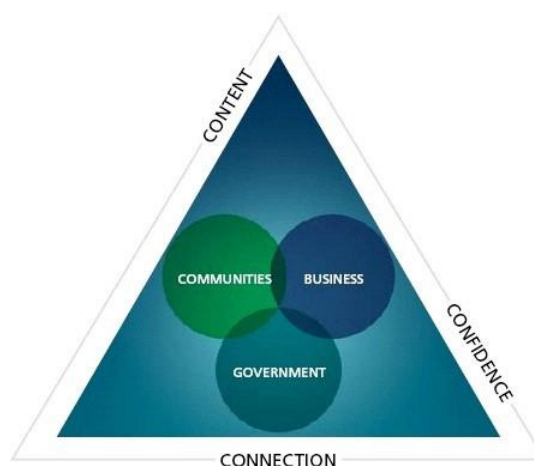


Figure 2-1: The Three Enablers of the NZ Digital Strategy⁴

The 2005 strategy argued “the full benefits of ICT can only be realised when everyone is able to participate, [so] we have emphasised the importance of partnership and collaboration” (ibid.). This element may have been under-played in practice, because by 2008 with the release of an updated Digital Strategy 2.0, collaboration had been elevated in importance, becoming a fourth ‘enabler’. The idea that collaboration between partners is fundamental relates to the need for exogenous and endogenous agendas to be reconciled (Gaved & Anderson, 2006) so that stakeholders are working together on an equal footing. Yet many of the untested assumptions present in the first Digital Strategy, such as digital media literacy leading to social cohesion, persist in the updated version even after several years of implementation.

Given a governmental commitment to universal internet access as a tactic in lifting educational achievement and economic performance, an efficient way must be found to resource it, other than government funding alone. The shift toward a partnership approach to community internet as in the Digital Strategy (Figure. 2-1) shows an expectation that a range of stakeholders is involved in supporting it. The partnership approach recognises that community members should at the very least be involved in, if not driving, solutions to the social and economic problems affecting them. Additionally, a progression in government thinking is seen in the idea that society is served by a coalition of business since, arguably, business contributes to society’s problems, with the government and communities themselves. This strategy is sometimes referred to as a PPP or 3Ps (public /private partnership) strategy (Department of Internal Affairs, et al., 2002) involving an agreement between a public sector agency, a private ‘for profit’ entity and a non-profit organisation to achieve an agreed

⁴ Source: Digital Strategy (Ministry of Economic Development et al, 2004, p. 10)

outcome. One criticism of this model is that it may imply that local communities and businesses pay for social services twice: not only do they pay taxes, but they are expected to come up with further resources (volunteered time, equipment, knowledge, expertise) to help solve local problems, a strategy that could be said to represent an abrogation of the traditional role of government in a welfare state (Coney, 1999).

During the period of the present research, the Digital Strategy passed through a consultation process aimed at finding a comprehensive set of tactics for better citizen engagement with ICTs. On the face of it, “the goals of the Strategy grew out of a dialogue with and among communities” (Graham, 2007) and the Strategy was described as

an ambitious plan for the development and implementation of policies aimed at achieving the ideal of all New Zealanders benefiting from the power of ICT to harness information for social and economic gain. By working together to implement the Strategy, we can seize the opportunities for increased prosperity and greater social cohesion that the effective use of the tools of ICT can deliver (Ministry of Economic Development, et al., 2004, Minister's Foreword, ¶19).

The Strategy is clearly intended to improve national productivity, partly through enabling more people to work from home using broadband, and in this way bringing New Zealand in line with higher-performing economies in the Organisation for Economic Cooperation and Development (OECD).

A Digital Futures Summit 2.0 was held late in 2007 to “explore how this country can maximise ‘being digital’ to address the challenges of becoming a high-tech, high-value, creative economy and society” (Hon David Cunliffe - Minister of Communications and Information Technology, 2007) and create a “revamped digital strategy manifesto” (Griffin, 2007, p. 2). Cunliffe's speech at the Summit was described as “resurrect[ing] some of those Knowledge Wave clichés with his talk of ‘turbocharging ICT’ and building New Zealand's ‘information highway’” (Griffin, 2007, p. 1) at least in part as an election year pitch to the public, although also acknowledging a widespread agreement at the summit that improving New Zealand's broadband infrastructure remains a priority.

2.2 THE INTERNET AND COMMUNITY

In the previous section a close identification between internet access and cohesive communities was shown to be present in the New Zealand government's social policy, where

statements such as “measures of social connectedness [include] access to telephones and to the internet” (Department of Internal Affairs, et al., 2002, p. 3) are set in the same context as “people who feel socially connected also contribute towards building communities and society” (ibid.). Communication technologies are generally viewed as empowering to individuals and communities, and integral to the functioning of a progressive society (Ministry of Social Development, 2006). The first of “five indicators ...of social connectedness” (ibid., ‘Indicators’ section) is “telephone and internet access in the home” (ibid.).

The literature concerning these key constructs (broadly speaking, social connectedness or cohesion, and internet access) as well as the relationship thought to exist between them is now reviewed. A variety of terms relating to community, connectedness, cohesion and capital are used in the literature and this range is also addressed so that a clear understanding is established for the purposes of research design, data collection and analysis in this study: what is to be assessed, how, and how the data are to be understood.

As noted by Hampton (2007) “existing research on how information and communication technologies influence neighbourhood relationships has been explored in three complimentary [sic] ...research traditions: community informatics, sociology, and communications” (p. 717). Reflecting this requisite inter-disciplinarity, this second section of the chapter draws on these broad but inter-connected fields of study. Community informatics as a distinct sub-field is reviewed separately in section 2.3.1.

2.2.1 COMMUNITY

Assumptions about social benefits that may be expected from improved internet access such as those permeating New Zealand’s Digital Strategy 2.0 (New Zealand Government - Ministry of Communications and Information Technology, 2008) are premised on an ideal of community which is rarely if ever defined. In the 2004 draft strategy, readers were informed that “*Communities will be strengthened*⁵ by being connected to fast global communications networks” (Ministry of Economic Development, et al., 2004, p. 6) and “Our businesses and *communities will possess the skills and confidence* to utilise national and local information resources” (ibid., p. 6). In this policy context, Computers in Homes was cited as a success story (ibid., p. 37). It also features in the updated Digital Strategy 2.0 where “community initiatives such as Computers in Homes provide computers and subsidised broadband access for families who might otherwise miss out” (New Zealand Government - Ministry of

⁵ Emphasis added

Communications and Information Technology, 2008, 'Connected communities' section). Thus Computers in Homes is understood at policy level in terms of hardware and access.

What is meant by community in this policy context? If a community becomes strengthened, how will we know? Answers to these questions are important for the present study, because it aims to assess how internet access and social cohesion are related in a free home internet scheme offered in community settings. Therefore in order to establish an understanding of what may be intended or implied by use of the term community such as those cited above, this section illustrates the ways in which the term is used in the literature. Also, because a variety of similar terms is used, such as *social capital* (Forrest & Kearns, 2001; Pigg & Crank, 2004), *social cohesion* (New Zealand Government - Ministry of Communications and Information Technology, 2007), *community renewal* (Housing New Zealand Corporation, 2007), *community capital* (D. Williams, 2006), *community capacity* (Casswell, 2001; McKnight & Kretzmann, 1996) and *community building* (Bimber, 1998; Toyama, 2007), these are explored in section 2.2.2 of the thesis (page 54).

Community, as noted briefly in Chapter 1, can be thought of simply as a “group or collectivity” (Vergunst, 2006, p.1) in society. We know it feels good to be part of a community – generally, if an individual feels he or she belongs to one, he or she believes support is available, that he or she is known, and others care about him or her. Yet Loader and Keeble (2004) note that the term tends to be “ambiguous” (p. 36) and

It frequently appears to mean different things to different people despite the fact that the term is often used as if in common agreement. In one sense it is imbued with the aura of companionship and human warmth which derives from its linguistically related concept of 'communication'. Consequently any technologies which foster more and perhaps better communications between people contribute to a greater sense of community. (Loader & Keeble, 2004, p. 36)

Postill (2008) goes beyond the claim of ambiguity in the term, arguing that too much emphasis has been placed on the concept of community because of the global process of internet localisation (and studies thereof), calling the use of the term an “epistemological challenge” (p. 413) because its “paradigmatic status has yet to be questioned by internet scholars” (ibid.). He concludes that it is “a polymorphous folk notion widely used both online and offline, but as an analytical concept with an identifiable empirical referent it is of little use” (Postill, 2008, p. 416).

Postill addresses two contemporary approaches to the use of what he calls the “folk notion” community paradigm in internet research, in a re-thinking of how to imagine localised sociality. He seeks more useful concepts in view of the inadequacies of overly general notions of community in, for example, the social networks approach led by researcher Barry Wellman (see page 53 - 54), and the community informatics (see section 2.3.1, pages 72 - 75) approach to the relationship between technological and social change. Community informatics tacitly values an ideal of local community as it looks to empower local groups to take control of technologies as a means of bolstering their autonomy and enabling participation in mainstream society. On the other hand the social networks approach has distanced itself from traditional conceptions of localised community, preferring to understand the relationship between the internet and society as primarily about the way it vastly extends people’s offline relationships in a “networked individualism” (Wellman, et al., 2003) model. Yet the position here is not to say that communities have disappeared, but rather “they have survived in the form of geographically dispersed global communities” (Postill, 2008, p. 415). The social networks approach to community has sought over the years to demonstrate the inseparability of offline and online community, concluding that “the internet is not destroying community but is resonating with and extending the types of networked community that have already become prevalent in the developed Western world” (Wellman, 2001a).

Postill argues that both the above approaches rely heavily on theoretical concepts with “troubled careers” (Postill 2008, p. 415), and prefers to broaden the range of conceptual tools and methodologies considered by researchers investigating technological change in society. For example, while community is a term that appears to be readily understood, there are other forms of social relations that do not fit the concept, such as neighbours, family, work group, friends – all of which are collectivities in which one feels belonging. They tend to overlap, and serve different purposes and activities. Citing anthropologist Vered Amit (2002, in Postill, 2008, p. 415), Postill notes that a group may mobilise for a particular purpose, but this does not mean they are necessarily part of a static ‘cultural group’ or identifiable community. Thus

members of a local organizing committee may assure a researcher that all revellers at a street party are one ‘community’. It does not follow that the same set of people will mobilize against the building of an airport in their vicinity. (Postill, 2008, p. 416)

Therefore an alternative to the “paradigmatic dominance” (Postill, 2008, p. 417) of ‘community’ in local internet studies is proposed: a concept called “social field” (ibid., p. 418)

drawing in particular on Pierre Bourdieu, already introduced in section 2.1.3 for his ideas relating to agency and social reproduction. In Postill's pursuit of a more useful paradigm than community, he finds in Bourdieu's notion of social field a way out of problematic ambiguity:

Put simply, a social field is a domain of practice in which social agents compete and cooperate over the same public rewards and prizes (Martin, 2003). One advantage of 'field' is that it is a neutral, technical term lacking the normative idealism of ... community. (Postill, 2008, p. 418)

Rather than attempting to understand local internet and the groups of people involved via the lens of community, Postill suggests it may be more useful to adopt the idea of social fields that may be somewhat related segments in a "porous, conflict-prone field of residential affairs" (ibid., p. 418) instead of separate entities. This conceptual framework becomes useful in the current study of internet access and social cohesion, for it allows the groups being studied to be thought of as associations of individuals who share some interests and certainly form a network of relationships, while allowing us to downplay an attempt to decide in what ways they are communities.

Although community often tends to be associated with the ties of support that exist between people within a geographical area, increasingly this connection is contested. Wellman's colleague Keith Hampton, ethnographic researcher in the Toronto suburb of "Netville", wrote in 2002 that

When one defines communities as sets of informal ties of sociability, support and identity, they are rarely neighbourhood solidarities... Communities consist of far-flung kinship, workplace, interest group and neighbourhood ties that together form a social network that provides aid, support, social control and links to multiple milieus. (Hampton, 2002b, p. 228)

In the 1960s Marshall McLuhan conceived of a future global village, a vision in many ways brought to fruition by the internet for the way in which it has accelerated "the death of distance" (Cairncross, 1997) in a physical sense. While arguably "communication across distances does not reproduce the intimacy that is the hallmark of village life" (Fortner, 1993, p. 24), these comments were made at a time when the full potential of the internet was only beginning to be understood, and the assertion is now disputed. For example, while community is generally understood to be fostered by interpersonal contact, by reciprocity, by meeting together (D. Williams, 2006), certain qualities of community can also be facilitated and sustained across distances using a variety of communications media from letters to mobile

phones to web-based channels like e-mail and social networking websites, so that people can be constantly in touch if they wish to be (Castells, Fernandez-Ardevol, Qiu, & Sey, 2006).

However consensus is yet to emerge on the question of whether virtual community (Rheingold, 1993) is qualitatively equivalent to geographical community. On one side, Wellman argues in favour of forms of study such as “social network analysis ... [that] reconnect the study of individuals to the relationships in which they are embedded” (Wellman, 1999b, p. xiv), in effect asserting that individuals are their relationships and should be understood that way. Furthermore “the trick,” he states, is “to conceive of community as an egocentric network, a ‘personal community’, rather than as a neighbourhood” (ibid.). In this sense, while one might at first think of community as necessarily being located in a place, it may be better understood as a feeling an individual experiences in relation to their unique set of personal networks which includes distant ones as well. Wellman stresses in his work that community is “a pre-eminently social phenomenon” (p. xiv) that “can stretch well beyond the neighbourhood” (ibid., p. 333), and neighbourhood is “an inherently spatial phenomenon” (ibid., p. xiv), elsewhere called a “living space” (Meegan & Mitchell, 2001). From an urban studies perspective

While ... a community is not assumed to imply spatial propinquity or indeed a local rather than a national dimension, when operationalised for policy or research purposes it tends to take on a strong sense of local space, albeit with ambiguous and fluid boundaries. (Forrest & Kearns, 2001, p. 2137)

Meegan et al draw a distinction between community and neighbourhood in this way:

Community is ... related to the term ‘neighbourhood’ for which it is sometimes used as a synonym. However, usually neighbourhood is much more restricted in spatial dimensions. It relates to the area around a residence within which people engage in neighbouring, which is usually viewed as a set of informal, face-to-face interactions based on residential proximity. (Davies & Herbert, 1993, cited in Meegan & Mitchell, 2001, p. 2172)

Quite specific definitions of neighbourhood include that of Kearns and Parkinson, for whom it is “typically defined as an area of 5-10 minutes walk of one’s home” (2001, p. 2103). Wellman cites Jane Jacobs (1961) as stating “the eyes on the street are the foundation of neighbouring” (1999, p. 355), a metaphor implying that being neighbourly is showing an active interest in events and people in the immediate vicinity. Familiarity with objects and people - “the notion of the neighbourhood as the familiar and predictable” (Kearns & Parkinson, 2001, p. xxx) - is also a feature of neighbourhoods: “...people know by sight most of those who live there and probably recognise everyone of their own age group, know all the

significant buildings and central focus of the area - shops, schools, libraries, children's playgrounds..." (Meegan & Mitchell, 2001, p. 2172).

Because of the nature of the research settings in the present study which were neighbourhood based, my starting point in defining community is the geographic locality, in part because "most of the resourced and evaluated community initiatives in New Zealand have worked with geographical communities" (Casswell, 2001, p. 25). However a range of less tangible associations are also acknowledged and included in the research as "the community is a social space, a sector made up of informal and relatively unmanaged associations" (ibid., p. 25). In the present research, participants were drawn from groups of families from urban schools, and often they knew one another as they lived nearby. As members of the Computers in Homes scheme, the school brought them together by e-mail, so to that extent their offline world (the everyday school neighbourhood) is potentially complemented by the online world of e-mail interaction. Whether in the real world or the virtual world, that sense of community is concerned with a feeling of being known and recognised, of having a place, of being valued, of being able to find help and support within that community when it is needed: "neighbourhood ties are the source of very specific types of support ...such as emergency aid" (Hampton, 2007a, p. 718). Computers in Homes, funded by government ministries and guided by social policy emphasising the need for community building (as illustrated in section 2.1.8 previously), aims to build stronger community in a broad sense. For example, one of its key goals is to "empower low socio-economic communities to become active participants in the online world" ("Computers in Homes ", 2007, 'About CIH' section, ¶12).

Even though "for the most part, 'community' still refers to neighbourhood" (Hampton, 2002b, p. 228) in the popular imagination, it is possible for someone to reside in a neighbourhood without feeling they are part of a community, while a sense of community may also be experienced as a result of participating in "multiple milieus" (Hampton, 2002b, p. 228) or networks of "far-flung kinship, workplace, interest group and neighbourhood ties that together form a social network" (ibid). Thus community does not have to be associated only with a physical place such as a neighbourhood, because "similarity of interest is more important in forming relations than similarity in setting" (Hampton, 2002b, p. 228) and it is the networks of relationships that characterise communities. Therefore, they argue, "communities are usually not groups, but are social networks that are sparsely-knit, loosely-bounded and far-flung" (Hampton & Wellman, 2003, p. 277).

Loader and Keeble (2004), while acknowledging that the concept of community remains contested, take the view that because it can be thought of as “an ‘intermediate space’ between the individual/family and larger social structures, such as government” (p. 4) it is “important for fostering many life opportunities” (ibid.). Meegan and Mitchell describe neighbourhood in a very similar way as “a key living space through which people get access to material and social resources, across which they pass to reach other opportunities” (2001, p. 2172). Thus the idea that both community and neighbourhood are a form of conduit to social opportunity underscores the potential value of interventions - such as Computers in Homes - at this level as they may point people towards engagement with life beyond the immediate vicinity or their immediate social networks.

Finally, the neighbourhood has “heightened importance” (Meegan & Mitchell, 2001, p. 2174) in the context of social exclusion for certain groups such as the unemployed, and can be thought of as a “place-based community” (p. 2179). Wellman also points out “neighbourly relations are especially important when poverty or disability leads people to invest heavily in local relationships” (Wellman, 2001b, p. 11). In this regard, Gaved and Anderson argue that “place still matters” citing “an increasing trend towards considering ICT initiatives as part of existing social interactions rather than separate, purely online virtual communities of interest” (2006, p. 5).

2.2.2 STRONG COMMUNITY AND SOCIAL COHESION

If social policy aims refer to a harmonious, productive community, then its characteristics must be better understood, because “if public institutions and public policies are to work towards a goal of greater social cohesion, then greater clarity and consensus about its meaning and effects are required” (Kearns & Forrest, 2000, p. 996). This call for greater clarity lies behind the goal of the present study, to assess how internet access and social cohesion are related in a free home internet scheme. In order to establish whether a relationship exists in this way then the construct itself must be clear. In this section of the literature review, while I acknowledge and explore the fact that clear definition of social cohesion - and related terminology - tends to be overlooked in government policy documents and the like, and Friedkin (2004) describes the field of inquiry as being in “disarray” (ibid., p. 412), the review that follows here is intended to distil what is understood by social cohesion for the purposes of the present study. This is not to say that the concept itself is unclear, but to draw together the ways the term has been used and thus to highlight those aspects that are held in common to guide the design of the study set out in this thesis.

As explained in section 2.2.1, a goal of stronger community often appears to underlie community interventions like Computers in Homes, yet the way in which that goal is to be achieved is generally not explicit. Another factor that tends to muddy the waters of exactly how internet interventions are intended to work is that a range of similar terms is used, so that intended meanings can be nebulous (Kearns & Forrest, 2000). While in a broad sense there is some agreement that a cohesive society, essentially, is one that “hangs together” (Kearns & Forrest, 2000, p. 996), care is needed to distinguish how each term is understood, and how they inter-relate rather than assuming that everyone knows what they mean (ibid.).

- SOCIAL CAPITAL

A tension between optimistic and pessimistic views of the relationship between the internet and society was fuelled in the early 2000s by the views of Professor of Public Policy at Harvard University, Robert Putnam, best known for his ground-breaking analysis on declining social capital which enjoyed a period of high exposure from the late 1990s (1996, 2000, 2002). Putnam defined social capital as “features of social life - networks, norms, and trust - that enable participants to act together more effectively to pursue shared objectives” (Putnam, 1996, ¶12), arguing that social capital had collapsed in the United States of America (2000, 2002) based on statistics showing a dramatic decline in the numbers of people involved in clubs, churches, sports groups and the like. This view gained traction, especially in political circles where it became a “policy panacea” (Fine, 2001, p. 191) because arguably “it explains what is otherwise inexplicable” (ibid.) about post-modern social change. The idea that the glue holding society together was coming undone became attributed, in some circles, to the rise of media consumption, especially television (Moy, et al., 1999), which was thought to be eroding community at that time. Putnam concluded that a generational effect is significant in the decline in social capital, considering the passing of the “long civic generation” (Putnam, 1996, ¶13), those who had lived through the Great Depression and World War 2, was a key factor because “[these individuals] have been far more deeply engaged in the life of their communities than the generations that have followed them” (ibid.).

This period, around the turn of the millennium when internet research was just beginning to be established, was characterised more by pessimistic views of the relationship between internet access and community than optimistic ones, at least in part because Putnam and others were arguing that media technologies had begun a process of eroding social structures in the 1970s when television consumption had become widespread. For example, results of the HomeNet study among 93 families in Pittsburgh, Pennsylvania in 1995 and 1996 showing

internet use increases loneliness and erodes psychological wellbeing (Kraut, et al., 1998) were briefly sensational, to the extent that the study was replicated in Sweden (Wästland, Norlander, & Archer, 2001). However a follow-up study by the original research team with the same Homenet participants contradicted the earlier findings (Kraut, et al., 2002). Thus the idea that using the internet somehow causes people to become isolated and unhappy is a perspective now generally considered passé.

Over recent years Putnam has continued to refine his thinking on the role of social capital in society, explaining it in this way:

The central premise of social capital is that social networks have value. Social capital refers to the collective value of all "social networks" [who people know] and the inclinations that arise from these networks to do things for each other ["norms of reciprocity"]. (The Saguaro Seminar, 2007, 'About social capital' section)

Now he prefers "a 'lean and mean' definition: social networks and the associated norms of reciprocity and trustworthiness" (Putnam, 2007, p. 137). Social capital is thus the value derived from social ties: out of our social relationships comes the impetus to do things for one another (ibid.). This impetus is a resource, generally understood to be like financial capital, in that a community needs to use it in order to grow more of it (D. Williams, 2006). Expressed philosophically, social capital comprises "'moral resources' which increase with use and are depleted without regular use" (Kearns & Forrest, 2000, p. 1000).

Social capital has been described as a "contentious and slippery" (D. Williams, 2006) term. Even Putnam tends to use a range of conceptually similar expressions in his writing, including "community engagement", "civic trust", "social trust and reciprocity" (The Saguaro Seminar, 2007, 'Executive Summary' section). Social capital and civic engagement seem to be used almost interchangeably, as in the title of a web page to which Putnam is a key contributor, called Civic Engagement in America (The Saguaro Seminar, 2007) where the content is actually about social capital. In these contexts, "the usual premise is that [it] is a good thing, so it is conveniently assumed that further elaboration is unnecessary" (Kearns & Forrest, 2000, p. 996).

This "good thing" (Kearns & Forrest, 2000, p. 996) called social capital is often viewed as being in short supply. This may be because a focus on disadvantaged neighbourhoods in research and literature on community is caused by social policy, contributing to "deficit theory syndrome" (Forrest & Kearns, 2001, p. 2141) or a "deficiency-oriented social service model"

(McKnight & Kretzmann, 1996, p.1) in which communities are “noted for their deficiencies and needs” (ibid.) and therefore are seen to lack certain resources or exhibit less robust processes rather than actually having assets. In the UK, for example,

In recent years cohesion has become an important goal of public policy in response to disturbances in Bradford, Burnley and Oldham in 2001 and the emergence of extremist views on the far right of British politics and amongst radical Islamists. In these circumstances there has been an increased emphasis on how we create a sense of belonging and place, based on a more inclusive set of identities...(Institute of Community Cohesion, 2009, ¶1)

An apparent deficit of social capital, called a “crisis in social cohesion” (Forrest & Kearns, 2001, p. 2126) has been a strong theme in the literature on community. Building on the ideas of Coleman (1988) who identifies three types of capital – physical, human and social – and views social capital as a resource that can be “mobilized for collective action” (Pigg & Crank, 2004, p. 60), Onyx and Bullen (2000) consider social capital has five dimensions: networks, reciprocity, trust, shared norms and social agency. Williams (2006) has referred to “confusion in the literature about whether social capital is a cause or an effect”; however some support is found for the idea that to generate social capital you have to have some to start with (ibid., ‘What is social capital?’ section).

The idea that social capital is a necessary building block of social action (Pigg & Crank, 2004) has become orthodox. Putnam’s focus is on the importance of associational activity for participation and democracy, and his approach is to view social capital as being both the social networks themselves, and the positive outcomes of these (D. Williams, 2006), whereas other researchers understand it to be either the networks or the outcomes (ibid., p. 2). In this sense, social capital has two levels – one perspective stresses the way individuals can leverage networks for their own advantage such as in deriving social support for themselves (Wellman & Berkowitz, 1988), while another perspective is to view social capital as a collective asset that improves social outcomes at a community level (Ferlander, 2003).

A difference of opinion on the relationship between social capital and communication technologies should be considered because “considerable rhetoric ... exists regarding the potential of modern information and communications technology (ICT) to affect the development of social capital in positive ways” (Pigg & Crank, 2004, p. 59). Significantly, Putnam examines a range of “suspects” in the decline of social capital, including “television, the electronic revolution, and other technological changes” (Putnam, 1996, ¶18). He concludes that the “prime suspect” is television (ibid., ‘Our prime suspect’ section) because of

evidence that “TV viewing is strongly and negatively related to social trust and group membership” and time displacement evident in “a negative correlation [exists] between television watching and community involvement” (ibid., ‘How might TV destroy social capital?’ section). While he is directing his attention specifically at television here, he places it in the context of “the electronic revolution, and other technological changes” (Putnam, 1996, ¶18), implying that electronic technologies are negatively affecting the quality of social life.

However Quan-Haase and colleagues suggest that Putnam may only be “measuring old forms of community and participation, while new forms of communication and organisation underneath his radar are connecting people” (Quan-Haase, Wellman, Witte, & Hampton, 2002, in Wellman & Haythornthwaite, 2002, p. 292). Wellman (2009) gently takes issue with Putnam’s understanding of social capital, arguing instead that communication technologies are having a very positive impact on social connectedness. While identifying Putnam as a key figure in the controversy over community breakdown and social isolation in America, and agreeing “Bob Putnam got this right” (ibid.) in particular reference to families now spending less in-person time together than they did in the 1970s, Wellman argues on the basis of his “triple revolution” - personal internet, mobile connectivity, and social networks - (ibid.) that people are in far more frequent contact than ever before, and that there is a great deal of communication going on by many means largely fostered by the internet. Thus key figures in research and scholarship differ markedly in their assertions regarding whether and how the internet is related to apparent change in social dynamics.

Putnam’s more recent work has taken a surprising turn, with findings from a sample of 30,000 respondents from across the USA adding to the impression of a breakdown in support networks in society (2007). Putnam’s results point to “immigration and ethnic diversity tend[ing] to reduce social solidarity and social capital” (2007, p. 137), a claim that runs counter to the widely held assumption that social diversity is desirable and healthy, a characteristic highlighted in the literature on cohesion and connectedness and detailed in the next two sub-sections of the chapter.

- SOCIAL COHESION AND CONNECTEDNESS

Even if the causes are disputed, if Putnam is right about the breakdown of support networks in society it may be that the qualities of strong community are latent and therefore need to be actively fostered through harnessing a group’s impetus to operate collectively. This section reviews theory on how this may be brought about.

While an ideal of strong community is sometimes alluded to in a goal of *community cohesion* in the literature (Vergunst, 2006), with cohesion “address[ing] the characteristics (and the strength in particular) of the bonds between the individuals who constitute that collectivity or group” (ibid., p. 1), the term *social cohesion* (Das, 2005; Forrest & Kearns, 2001; Friedkin, 2004) is more often used. Putting the concept in its most simple terms, Burt (1999) considers that, where “the receiving person [is]....ego... [and] the source person, alter... cohesion refers to the strength of the relationship between ego and alter” (p. 3). Thus “for example, cohesion would be high between two friends” (Burt, 1999, p. 3).

The literature on cohesion features an emphasis on the ability of a cohesive group to mobilise toward a collective goal. A focus on collective action “historically ...enabled citizens to efficiently pursue common goals, often creating community wide gains” (D. V. Shah & Scheufele, 2006, p. 2) in a socially cohesive setting. Collective action as a characteristic of cohesion is also highlighted by Friedkin (2004):

The members of a highly cohesive group, in contrast to one with a low level of cohesiveness, are more concerned with their membership and are therefore more strongly motivated to contribute to the group's welfare, to advance its objectives, and to participate in its activities. (Cartwright, 1968, cited in Friedkin, 2004, p. 412).

Spoonley and colleagues (2005) cite a Canadian definition of a socially cohesive society as “one where all groups have a sense of belonging, participation, inclusion, recognition and legitimacy” (Jenson, 1998, in Spoonley et al, 2005, p. 88) and suggest that social cohesion is “interactive” (ibid., p. 88). By inference, it must therefore inhere in networks of relationships. Additionally, the degree of cohesiveness in a group contributes to social influence: “in cohesive groups, conformity pressures are greater because individuals value the opinion of other group members” (Vishwanath, 2006a, p. 327) and hence “in such groups, individual internal attitudes and beliefs converge with that of the group” (ibid.). Thus interpersonal influence plays a vital role in social cohesion.

Further, social cohesion, as it features in the aim of the present research, may be linked to the presence of influential individuals or opinion leaders, a topic reviewed in section 2.1.1 (page 26 of the thesis). Burt (1999) describes cohesion in a marketing setting “in which something about the social network around two people makes the belief or behaviour contagious” as “the strength of the relationship between [the receiver] and [the sender]” (p. 3). In the case study settings of the research project described in this thesis, this approach may be useful because in a sense the Computers in Homes free home internet scheme is a marketing ‘offer’.

Beliefs and behaviours about internet use need to become contagious among a diverse group of consumers in order for diffusion (Rogers, 2003) of the idea to occur, passing it from one person to another through the process of interpersonal influence.

New Zealand government policy in the 2000s is specific about social cohesion, saying it is evident where people feel a part of society; relationships are strong; differences are respected; people feel safe and supported by others (Statistics New Zealand, 2006); and they feel a sense of belonging, identity, and willingness to commit to shared tasks. These social cohesion characteristics are incorporated in the design of the present study, as will be shown in chapter 3, section 3.5.2 (page 114 – 117).

Another basis for characterising cohesion, and one perhaps more subjective, is suggested by Forrest and Kearns who see it as “getting by and getting on at the more mundane level of everyday life” (2001, p. 2127). This definition is found within a discussion of the importance of neighbourhood for social capital. In this sense, getting on with the ordinary minutiae of everyday life within one’s neighbourhood contributes to cohesion. Forrest and Kearns (2001) see that the domestic continuities of everyday life in any community are as valuable as the more actively altruistic expressions of engagement in community life. In other words, just coping with day to day life is a feature of cohesion that helps maintain order and stability, and we “may underestimate the importance of the lived experience of the dull routine of everyday life” (ibid., p. 2127) for its role in “ongoing ‘repair work’ and ‘normalisation’” (ibid.).

In other publications, Forrest and Kearns propose a more structured model of social cohesion incorporating five elements (Forrest & Kearns, 2001; 2000), of which social capital is one – in this sense, social capital is indicative of social cohesion. Their model includes: common values and a civic culture; social order and social control; social solidarity and reductions in wealth disparities; social networks and social capital; and territorial belonging and identity (Kearns & Forrest, 2000, p. 996). Thus they locate social capital as a characteristic or outcome of social cohesion. In turn, where “a cohesive society is one in which dilemmas and problems can be easily solved by collective action” (Kearns & Forrest, 2000, p. 1000), social cohesion is more likely to occur if social capital exists along with civic engagement, expressed through associational activity in neighbourhood and community organisations (ibid.). This Kearns and Forrest (2000) model of social cohesion, highlighting the importance of *existing relationships and networks* to “sustain the expectations, norms and trust which facilitate such solutions” (ibid., p. 1000) is one that underpins the research design for the present study, as shown in

chapter 3 (section 3.5.2, especially Table 3-4, pages 115 - 117), and in the organisation of results in chapter 4.

Civic participation is another term sometimes used that touches on the theme of collective action, and appears to be used as an equivalent to civic engagement. Defined by Shah and Scheufele as “public involvement in efforts to address collective problems” (2006, p. 2) civic participation equates with civic engagement as understood by Putnam, and seems to encapsulate one of the key behavioural outcomes of a cohesive group.

CONNECTEDNESS

Elsewhere the concept of *social connectedness* is understood to be closely related to social cohesion (Statistics New Zealand, 2006). Indeed even Putnam uses this term, apparently as a surrogate for social capital, exploring “why education has such a massive effect on social connectedness” (Putnam, 1996, 'Education deepens the mystery' section). “Social connectedness” is a construct used by government ministries such as New Zealand’s Ministry of Social Development (2006), perhaps inspired by the approach to social policies in the United Kingdom during New Zealand’s nine years of Labour-led government from 1999 - 2008. In the United Kingdom,

...a cohesive community is one where: there is a common vision and a sense of belonging for all communities; the diversity of people's different backgrounds and circumstances is appreciated and positively valued; those from different backgrounds have similar life opportunities; and strong and positive relationships are being developed between people from different backgrounds and circumstances in the workplace, in schools and within neighbourhoods. (Local Government Association, 2002 and 2004, cited in Institute of Community Cohesion, 2009)

In the New Zealand setting, social connectedness - “the relationships people have with others” (Ministry of Social Development, 2006, 'Introduction' section) - is seen by government to “also refer to people joining together to achieve shared goals that benefit each other and society as a whole” (ibid.), a definition strongly echoing those for social cohesion in the previous section. Furthermore “links between social connectedness and the performance of the economy” (ibid.) are said to be evident in “several studies” (ibid.). The Ministry of Social Development website cited above identifies five indicators of social connectedness that together “measure the opportunities for and the actual levels of connection between people, both within their immediate social groups and within the wider community” (Ministry of Social Development, 2006, 'The Social Report', p. 111).

The first three of these indicators are “telephone and internet access in the home, regular contact with family/friends, [and] trust in others” (Ministry of Social Development, 2006, 'Indicators' section). The priority given to internet access as an indicator of social connectedness is based on the view that “the internet...improves people’s ability to access information and ... provides more opportunities for people to participate in society” (ibid.). This explicitly assumed role for internet access in cohesion is a key reason for measures of internet “connectedness” (Kim, Jung, Cohen, & Ball-Rokeach, 2004) being included in the research design for the present study. All three of these indicators (internet access, contact with family and friends, and trust in others) were used as components in the design of the current research, as will be shown in chapter 3. Participation in unpaid work outside the home, another social connectedness indicator seen in an earlier iteration of the Ministry of Social Development website, was also built into the research design because it indicates a willingness to volunteer in the community.

The range of definitions and dimensions of cohesion set out so far tends to highlight the *individual* experience – that is, what feelings and behaviours are generated *for individuals* by a cohesive community? However Friedkin (2004) notes that social cohesion can be defined either through individual level behaviours and attitudes (such as volunteerism and participation), or through group level “conditions” (ibid. p. 410) and outcomes. If cohesion exists on two levels in this way, an important question for those who would wish to build cohesion, therefore, is ‘do the individual level behaviours / attitudes arise *because* of the group level conditions? Or alternatively, do the group level conditions arise because of the individual level behaviours / attitudes?’⁶

Friedkin suggests that “groups are cohesive when group-level conditions are producing positive membership attitudes and behaviours, and when group members’ interpersonal interactions are operating to maintain these group level conditions” (p. 410). Thus Friedkin asserts the primary importance of *group level conditions*, which in turn generate *individual responses*. He believes “we should discard the idea that group-level conditions indicate social cohesion and instead treat these conditions as antecedents of particular individual membership attitudes and behaviours” (p. 416). In a sense, therefore, social cohesion is something that accumulates recursively, with the group characteristics laying the foundation for individual behaviours that build upon it, as responses to the right conditions. This perspective – starting with features of the group, and then addressing individual behaviours

⁶ My question, not Friedkin’s.

within that setting – is taken in the design of the study, as explained in section 3.5, research procedures.

Lastly, ‘cohesion’ or overall wellbeing at community level, drives the development of the ‘capital’ or resource located in social networks, a formula for community building seen in New Zealand’s policy discourse, where “building social cohesion helps to create social capital ... networks and norms that help society function effectively” (Statistics New Zealand, 2006, ‘How is social cohesion relevant to sustainable development’ section). In other words, one form of this desirable community resource causes or promotes the existence of the other; social cohesion is required to generate social capital. This approach echoes the relationship argued by Friedkin (2004) between social conditions and individual behaviours, summarised above. Friedkin’s point is that group conditions, such as the number of interpersonal ties and the pattern of social networks (p. 416), are the antecedents for individual behaviours, such as joining a group or volunteering at school. This parallels the idea cited above from government literature that individual level behaviours characterising social capital arise out of a group setting where social cohesion already exists.

- COMMUNITY CAPITAL AND COMMUNITY CAPACITY

The terms reviewed so far relate to one another in this way: social connectedness could be described as a somewhat colloquial expression of the concept of social cohesion, and is encountered especially in government literature such as websites (Department of Internal Affairs, et al., 2002; Ministry of Social Development, 2006). Conceptually related to social cohesion, social capital is, however, not equivalent. Cohesion is

...widely used to describe a state of harmony or tolerance between people from different backgrounds living within a community [and] linked to the concept of social capital and the idea that if we know our neighbours and contribute to community activity then we are more likely to look out for each other, increase cohesion and minimise the cost of dependency and institutional care. (Institute of Community Cohesion, 2009, ¶11)

Social capital, generally understood to mean networks of reciprocity from which people derive support in a social grouping, is a dimension of communities that is an outcome or characteristic of social cohesion, and a resource that can be leveraged for collective action.

In addition to social cohesion, other phrases are used in the literature to express that desirable combination of intangible features, characteristics, outcomes and activities of a healthy community. These are discussed here in order to distinguish them from social cohesion, the

preferred term in this thesis. *Community capital* has a specific local or contextual focus, but it is conceptually related to social capital, loosely understood to mean informal social ties (R. Allen Hays, 2007), and shares denotations of trust, mutuality, tolerance, and other regard (Coleman, 1988; Fukuyama, 1995; McClenaghan, 2000). In a group or community setting, such behaviours and attitudes may be directed towards the achievement of shared goals or the enhancement of shared values. *Civic engagement*, used in the social capital literature, is “people's connections with the life of their communities, not only with politics” (Putnam, 1996, ¶12), or more specifically “associational activity in neighbourhood and community organisations” (Kearns & Forrest, 2000, p. 1000). In general then, civic engagement is evident in specific actions of individuals that are oriented toward community and civic life, such as volunteering time for school events or committees.

Community capacity is used to describe the relative ability of a group to mobilise resources, to plan, and reach toward collaboratively derived goals. Although the phrase tends to be used without clear definition (Casswell, 2001), the nearest may be a community's “capacity to identify and address social and health issues at the community level” (ibid., p. 23), implying a consideration of civic infrastructure and community resources such as skilled, available people, and time. Community capacity is used as a means of describing the capability latent within a community to frame its own solutions in a societal context where “the hard truth is that development must start from within the community and, in most of our urban neighbourhoods, there is no other choice” (McKnight & Kretzmann, 1996, p.2).

Community capacity could be understood as an embodiment of other dimensions, as shown in Figure 2-2 below. Social cohesion (connectedness) is a dynamic operating on individual and group levels, with social capital and civic engagement – a willingness to volunteer and to act collectively – being outcomes. Together these processes constitute both latent and apparent community capital; finally, all of these components together amount to *community capacity*, the relative ability of a community to mobilise resources, to plan, and reach toward collaboratively derived goals:

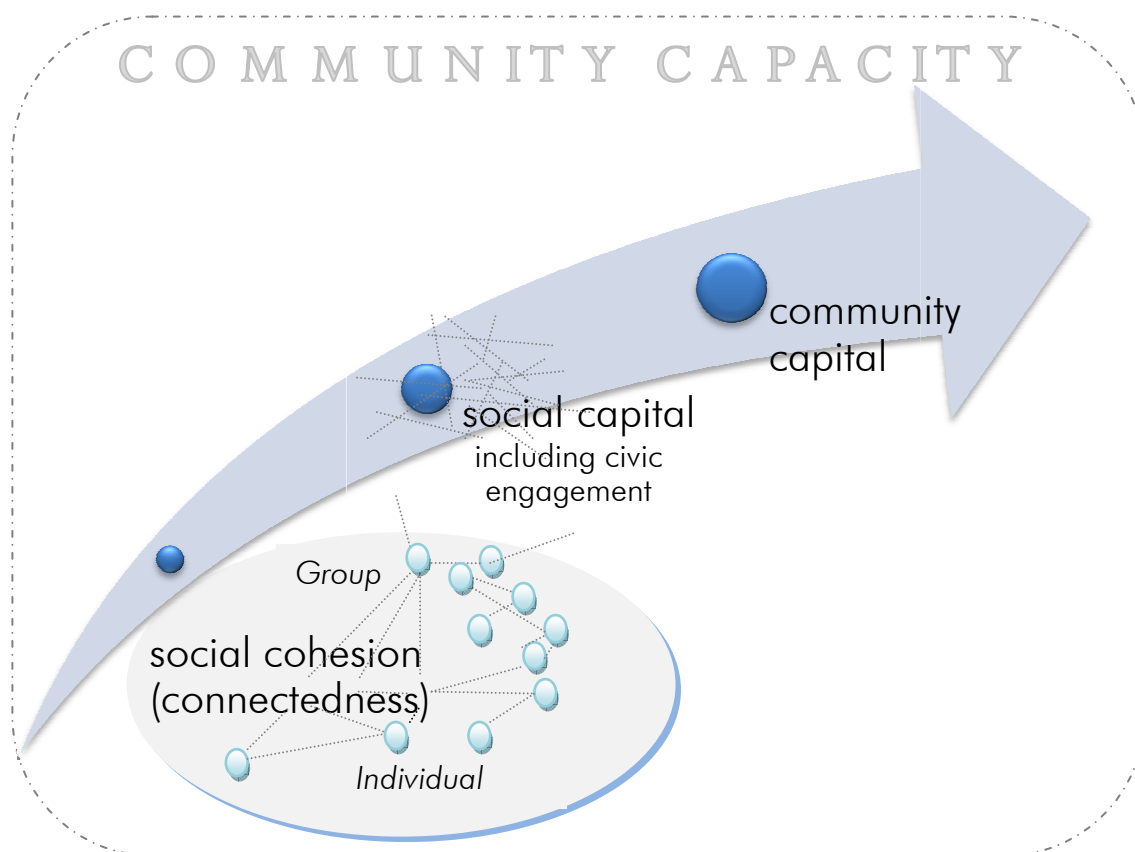


Figure 2-2: Relationship between key constructs: The resources of a community

- OPERATIONALISING SOCIAL COHESION

The literature relating to social cohesion reviewed earlier in this section highlighted a number of characteristics that can be understood as existing on two levels. In order to foreshadow the ways in which these characteristics will be addressed in the research design (chapter 3) these are summarised in Figure 2-3 below as a reference point.

Both group level and individual levels are comprised of a number of dimensions drawn from the variety of definitions of social cohesion reviewed in this chapter. For example, an overall quality of social cohesion is sensed where society “hangs together” (Kearns & Forrest, 2000) characterised by “the bonds between ... individuals who constitute [a] collectivity or group” (Vergunst, 2006, p. 1), where “dilemmas and problems can be easily solved by collective action” (ibid.).

	DIMENSION	SOURCE
INDIVIDUAL LEVEL BEHAVIOURS	1 Social connectedness Characterised by unpaid work, internet access, interaction with family and friends	Ministry of Social Development (2006)
	2 Routine day-to-day life Getting on at the everyday level	Forrest and Kearns (2001)
	3 Inclusiveness Valuing of diversity; people feel part of society	Statistics NZ (2006)
	4 Support People feel safe and supported by others	Ministry of Social Development (2006)
	5 Place attachment and identity Belonging, identity, willingness to commit to shared tasks	Spoonley et al (2005)
GROUP CONDITIONS & OUTCOMES “SOCIETY HANGS TOGETHER”	6 Networks of mutual support Bonds holding people together	Vergunst, (2006)
	7 Social capital Interaction within the community; civic engagement and associational activity	Kearns and Forrest (2000)
	8 Social solidarity Dilemmas and problems can be easily solved by collective action; ability to mobilise	Kearns and Forrest (2000); Friedkin (2004)

Figure 2-3 Dimensions of social cohesion for assessment

These social cohesion characteristics can be somewhat abstract, such as “bonds holding people together” (Vergunst, 2006) yet they also lend themselves to a range of integrated research procedures, as will be explained in the next chapter, in section 3.5.2.

2.3 INTERNET AND COMMUNITY RESEARCH

Is there evidence that community internet schemes have an impact on community wellbeing? Studies exploring the relationship between internet use and social impacts have addressed this question since the late 1990s, although Gaved and Anderson (2006) caution that because of “the novelty of the field” (Gaved & Anderson, 2006, p. 26) and the fact that the internet is still regarded as an emerging phenomenon (Haythornthwaite, 2001), longer term effects cannot yet be known. Williams (2006) suggests that “one reason for the confusion about the social impacts of internet use is the scarcity of controlled longitudinal research” (ibid., ‘Internet-focused social capital research’ section).

An example of the way “comparisons over long periods of time may still prove difficult until the phenomenon ‘matures’ [because] effects will change” (Gaved & Anderson, 2006, p. 26) is the HomeNet trial based at Carnegie Mellon University. The first in this series of studies of the impact of internet use was a longitudinal field trial in which 169 members of 93 households were tracked during their first 12-18 months online. Results appeared to show that novices experienced increased isolation and depression within the first few months:

Greater use of the Internet was associated with small but statistically significant declines in social involvement as measured by communication within the family and the size of peoples' local social networks, and with increases in loneliness ... and depression. (Kraut, et al., 1998, p. 1028)

This study became known as the Internet Paradox study, after the title of the paper in which the results were published, since the technology used for communication purposes had the unexpected outcome of a negative impact on people’s wellbeing despite the fact that the internet is “a social technology” (Kraut, et al., 1998, p. 1029). However, a follow-up study by the same research team of the remaining participants from the original sample, showed that over a longer period of time the depression and alienation disappeared, and social interactions increased, so that “the use of the internet led to negative outcomes early in participants’ history online and more positive outcomes later” (Kiesler, et al., 2001, p. 14).

A replication of the Internet Paradox study was undertaken by a team of researchers in Sweden, who found a contradiction of any causal relationship between internet usage and psychological wellbeing. Yet findings similar to the Internet Paradox study were reported by Nie and Erbring (2000), based on a study of 2,035 internet users from a random sample of American adults, that “the more time people [use] the Internet, the more they lose contact with

their social environment. This effect is noticeable even with just 2–5 Internet hours per week, and it rises substantially for those spending more than 10 hours per week” (p 275). A possible weakness of the approach taken by Nie and Erbring (2000), as well as Kraut and colleagues (1998) could be that these early internet and community studies tended to “privilege the Internet as a social system removed from the other ways people communicate” (Hampton, 2002b, p. 229) rather than as integral to everyday life (Wellman & Haythornthwaite, 2002).

Notwithstanding the above findings suggesting that internet use may subtract in some way from quality of life, a decade ago the outcomes of spending time online were also expected to be positive in terms of creating a sense of belonging and connection (Kiesler, et al., 2001). This was believed to be so because of a recognition in the research that those who use the internet were doing so overwhelmingly in order to communicate, mainly by using e-mail (D. Shah, Kwak, & Holbert, 2001). However Kiesler and colleagues (2001) also noted that some studies showed “people who use e-mail heavily have weaker social relationships than those who do not ...and... people who use the internet heavily report spending less time communicating with their families” (p.4). Other research “shows that people who use the internet heavily report more social support ...and that people use the internet to bolster existing community” (ibid.). It is clear then that around the turn of the millennium, research findings were confusing and contradictory.

Ten years on from the HomeNet trials, while the medium of e-mail is being overtaken by other social networking applications for some users (Carnevale, 2006), the social motivation endures. Although “building community in a normatively rich sense is not the same as increasing the amount of social talk” (Bimber, 1998, p. 2), anyone observing young teens at play today with wireless internet, simultaneously chatting online, uploading data to their personal networking sites, viewing friends’ sites, downloading music or image files, and text messaging on their phones would see what looks very like social talk binding a community online and offline. The latter point is made in view of the fact that much online communication directly refers to offline activities, such as arranging to meet. While the displacement or hydraulic theory that “internet use has a considerably negative impact on sociability” (Nie & Hillygus, 2002, p. 14) and “the more time spent on the internet, the less time spent with friends, family, and colleagues” (Nie, et al., 2002, p. 30) has been influential, more recent research suggests that multiple media channels available to individuals in family settings are facilitating communication and kinship (“Connected lives: The new social network operating system,” 2009; Kennedy & Wellman, 2007).

A longitudinal study of the internet and community using a qualitative approach, and producing important findings about the relationship between internet access and community, was carried out from 1997 to 1999 by Keith Hampton and Barry Wellman in Toronto in a wired suburb they called “Netville”. Netville was “one of the first residential developments in North America to be built from the ground up with a broadband high-speed local network” (Hampton, 2002b, p. 230), and the study compared the ‘wired’ residents (N = 64 households) with a similar group of non-wired residents (N = 45 households) who lived in the same neighbourhood. The study is significant for the fact that its outcomes have clearly and consistently supported the view that the internet has a positive effect on neighbouring. Hampton and Wellman’s project (1999) has found in ethnographic as well as survey data that “much online activity is between people who live (or work) near each other” (p. 489), contradicting expectations at the time that internet use would facilitate more distant weak ties (Granovetter, 1973) rather than local ones:

One of the most startling findings in the Netville study was the extent to which ICTs encouraged the formation of local community. Compared to non-wired residents, wired Netville residents recognized three times as many of their neighbours, talked to those neighbours twice as often, visited 50 percent more often, called them on the phone four times as often, and further boosted their local communication through the use of email. (Hampton, 2002b, p. 230)

A related follow-up study by the same researchers (Hampton & Wellman, 2003) of four Boston neighbourhoods in the E-Neighbours project, once again found that the internet facilitates “interactions near the home” (Hampton, 2007a, p. 714) and “the evidence suggests that the Internet is ... slowly building local social networks” (ibid., p. 739). It is stressed however that this evidence is found “in those neighbourhoods where context favours local tie formation” (ibid.) where, for example, the neighbourhood already has an interest in building community.

It became apparent to me in consulting other studies that internet researchers find they must resolve an epistemological distinction between “hours of use as opposed to patterns of use” (D. Shah, et al., 2001) in their work, for these represent different – or complementary - understandings of the digital divide. An “hours of use” approach implies that internet use is quantitative; it is about access, and thus binary notions of either being connected or not; it is about a process of diffusion (Valente & Rogers, 1995) in society so that late adopters will eventually catch up and internet saturation will be achieved. One pragmatic reason for researching internet use in an “hours of use” manner is that one-dimensional studies are cheap to administer. Subjects of research become either users or nonusers, and “computer-

based technologies ... *[are]* tools that autonomous individuals use to gratify their needs" (Jung et al, p. 513). Other examples of this approach to studying the digital divide include the "unidimensional" (Husing & Selhofer, 2004, p. 24) DIDIX metric, designed as a digital divide index measuring diffusion rates. This model compares "technology adoption among the at-risk groups to ... adoption among the population average as a measure for the digital gap" (ibid., p. 25).

On the other hand, a "patterns of use" approach implies that achieving "e-inclusion" (Husing & Selhofer, 2004, p. 23) involves assessment of more than access. A large scale study in Los Angeles that influenced the research design in the present study in New Zealand is the Metamorphosis study of "communication technology and sense of community in real and virtual spaces" (Matei & Ball-Rokeach, 2002, p. 406). Metamorphosis, a "multi-year" (ibid.) study, explores the "ecological process by which new communication technologies are incorporated into existing communication environments" (Kim, et al., 2004, p. 613) in a "social shaping of technology perspective" (Matei & Ball-Rokeach, 2002, p. 408). The study explores the ways in which the internet, among other influences, has an impact on community in a range of diverse urban neighbourhoods. Although described as a "massive inquiry into issues concerning communication technology and urban community" (Ball-Rokeach, et al., n.d., p. 1) and therefore immensely larger in scale, Metamorphosis assisted as a reference point for the research goal and design in the current study. Seeking to draw conclusions on how to harness communication resources "to enable 'belonging communities' where people develop attachment to a residential area and act it out in their everyday communication ... behaviours", this work was a useful model for methodologies appropriate to belonging in a community, a component of social cohesion as discussed previously in 2.2.3 and shown as dimension 5 in Figure 2-3 (page 66).

The Metamorphosis research team acknowledged two dimensions in their conception of belonging: a subjective psychological view and a behavioural dimension (Ball-Rokeach, et al., n.d., p. 12), so their telephone interview questions reflected these equally in order to generate a 'Belongingness Index'. While not wishing to index belonging in my study, I did include questions on it in my interview schedule (questions A2 - A6, page 267), to establish a baseline indication of how attached respondents were to their neighbourhoods, one of the individual level characteristics of social cohesion (see Figure 2-3). Additionally, Ball-Rokeach et al. were interested in the idea that physical rootedness "has been found to positively affect community attachment" (ibid., p. 5), and therefore included questions, as I did, on the length of time the respondents had lived in the neighbourhood (question A1, page 267), whether they owned or

rented the home (question A2), and the distance they must travel to go to work or conduct the business of everyday life (question A9). The latter question was used because “boundary spanning activities” (Ball-Rokeach, et al., n.d., p. 5) such as daily travel may affect the sense of belonging an individual has to their residential neighbourhood.

Metamorphosis has contributed much to understanding of internet use in a community setting over a number of years through its framing of internet studies as part of a complex social infrastructure. As illustrated in section 2.1.4, research and policy responses that focus on simple access to the internet in due course gave way to those favouring a situated approach to the internet in community settings. The Metamorphosis approach was one that seemed far-sighted in the early 2000s when planning of the present study began. Among its findings at the time were that internet connections do not have a deleterious effect on social interaction (Ball-Rokeach, Kim, & Matei, 2001), and that internet “connectedness” is a preferable term to “use” (J. Jung, Qiu, & Kim, 2001, p. 512) because it “reflects a multilevel and contextual way of envisioning the relationship between individuals and technology” (ibid., p. 513). The Metamorphosis team developed a tool for assessing an individual’s relationship with the internet, the Internet Connectedness Index, on the basis that “conventional time-based measures of internet connectedness cannot tell us why people are connecting or how they shape their connections” (J. Jung, et al., 2001, p. 510). This development was a significant step forward in the research, drawing a distinction between “uses and connections” (ibid., p. 512) because those who employ the term “use”

... generally share an implicit, if not explicit, conception of computer-based technologies as tools that autonomous individuals use to gratify their needs. The technology-society relationship is reduced to a technology-individual relationship couched in largely microfunctionalist or instrumentalist ways of thinking. (J. Jung, et al., 2001, p. 513)

Just as the Metamorphosis researchers coined the term connectedness to reflect “a multilevel and contextual way of envisioning the relationship between individuals and technology (J. Jung, et al., 2001, p. 513), the team also approached the assessment of the *feeling* of community in an innovative way. It was operationalised as “belongingness” (Ball-Rokeach, et al., n.d.), an approach that assumes the quality of community can be measured by assessing the extent to which its members feel they belong. Both internet *connectedness* and community *belongingness* were adopted in the design of the present study, and will be explained in Chapter 3, especially in sections 3.5.1 and 3.5.2.

In reviewing and synthesising this range of different approaches to the study of the internet and community, I was thinking ahead to the design of my own study. The process of developing an interview that would be suited to the needs of this project involved consulting a variety of studies that had used a range of interview formats (Horrigan & Rainie, 2002a; Nie & Erbring, 2000; D. Shah, et al., 2001). These studies were selected for review because they represented large-scale, innovative, or classic approaches (Ball-Rokeach, et al., n.d.; Hampton & Wellman, 2000; D. Shah, et al., 2001) used in internet research that are often cited and regarded as authoritative. I sought models of types of questions, as well as question wording suitable for use in surveys and questionnaires. The Pew Internet and American Life Project was a rich source of ideas for data collection. This ongoing large scale study has assessed the impact of the internet on US society since 2000, and continues to generate copious findings and reports. In 2002, Pew researchers stated that email and the internet foster social connectedness (Horrigan & Rainie, 2002b, p. 5). At that time a number of nuances were apparent in the substantial data reported, such as that people's experience with internet use was accompanied by a reduction in frequency with which they emailed family and friends; that for veteran users, the internet "has acquired a quotidian cast" (ibid., p. 9); yet despite a drop in frequency of contact using email, people were continuing to say the internet had a positive impact on family relationships. These findings were of interest to me in terms of the goal of my own study (to assess how internet access and social cohesion are related in a free home internet scheme), and again I referred to research design in the Pew studies for examples of good practice.

Examples of how these studies influenced the research design for the present study are detailed in section 3.5.1 (pages 111 – 114) and section 3.5.3 (pages 118 – 121).

2.3.1 COMMUNITY INFORMATICS

Community informatics combines community internet practice and research, on the assumption that research can assist practitioners to evaluate and better position their community internet interventions (Gurstein, 2000). Technologically determinist assumptions that the internet can have direct effects on a population - for example, the idea that internet at school will enable students to be in direct contact with experts - gave rise to an earlier field of study called social informatics, "the body of systematic research about the social aspects of ICTs" (Kling, Crawford, Rosenbaum, Sawyer, & Weisband, 2000, p. 10). Social informatics was defined as an interdisciplinary study taking a critical orientation towards the goals and beliefs of those who commission and implement ICT interventions while, broadly, providing "a

rigorous but also rich ... basis for understanding the multiple roles that ICTs play in our lives" (ibid., p. 12).

Building on the social informatics foundation, the multidisciplinary field of community informatics "focuses on how ICTs can be used to empower the residents of neighbourhoods and cities" (Hampton, 2007b, p. 717). Mark Warschauer's comprehensive framework for researchers and practitioners aiming to effectively address the digital divide provided an early definition of community informatics:

Meaningful access to ICT encompasses far more than merely providing computers and internet connections. Rather, access to ICT is embedded in a complex array of factors encompassing physical, digital, human, and social resources and relationships. Content and language, literacy and education, and community and institutional structures must all be taken into account if meaningful access to new technologies is to be provided. (2002, 'Rethinking the Digital Divide' section)

Although "definition of the field [is] in some flux" (Stoecker, 2005, p. 14) the term community informatics describes a "field ... characterised by both a practice approach and a scholarly approach" (ibid., p. 14), and therefore began to be used to describe both the practice and research involved in hundreds of community internet initiatives worldwide aimed at better integrating the internet into community life. Loader and Keeble characterise community informatics as a "worldwide tradition" (2004, p. 1) of what in the UK, Canada and Australia are typically "initiatives which have been designed to explore the potential transforming qualities of the new ICTs for community development, economic regeneration, democratic renewal and social support" (ibid.). According to the inventor of the term, Michael Gurstein, community informatics is

...The study and the practice of enabling communities with Information and Communications Technologies (ICTs). Community informatics seeks to work with communities towards the effective use of ICTs to improve their processes, achieve their objectives, overcome the 'digital divides' that exist both within and between communities, and empower communities and citizens. (Gurstein, 2007, 'Focus and scope' section)

The field of study, that "tends to concentrate on communities of place rather than communities of interest" (Pigg & Crank, 2004, p. 60) and thus reflects the understanding of community expressed in section 2.2.1 of this chapter, established a formal international research presence with the creation of the Community Informatics Research Network (CIRN) which has held annual conferences in Prato, Italy since 2003, and an online *Journal of Community Informatics* that went live in 2005. Researchers in this field (Crump & McIlroy, 2003;

Gurstein, 2003; Rideout & Reddick, 2005) often work closely with local communities and community internet scheme providers (Merkel, et al., 2005), collectively committed to the goal of closing the digital divide, although sceptical interpretations can be found questioning whether community informatics is actually organised by and for elites rather than the excluded (Stoecker, 2005). However this field of inquiry is distinguished largely by a belief that grass roots (K. Williams, 2005), bottom up strategies are needed in order to create sustainable community change (Merkel, et al., 2005). Loader and Keeble make this point also, that in emphasising communication and information rather than technology, community informatics

...attempts to avoid those overly technical approaches which often present ICTs as a determining force for change and which give little opportunity for human choices, resistance, or mediation. Instead, CI places human agency as an essential component for the creative adoption, alteration and diffusion of the new technologies into community relations. It emphasises a grassroots perspective whereby community members are centrally involved in the application of ICTs for community development. (Loader & Keeble, 2004)

Furthermore, community informatics takes the view that a partnership philosophy and practice is critical in order to avoid corporate or government agendas taking precedence. Partnership views now appear to prevail in digital divide literature, the keywords being participation, community, and sustainability (Gaved & Anderson, 2006; New Zealand Government - Ministry of Communications and Information Technology, 2007), themes established in sections 2.1.8 and 2.1.9 in this chapter.

In an overview of how community informatics developed out of the “Free-Net movement of the 1980s” (Hampton, 2007b, p. 717), Keith Hampton highlights the way in which both movements focus particularly on providing internet access, computers and local information which may have “limited the extent to which projects focus on facilitating local communication... The focus is almost always on providing infrastructure and training, and rarely on empirical evidence of how interventions or internet use more generally influence community dynamics” (Hampton, 2007b, p. 717).

Because of the origins of community informatics in Free-Nets (providers of low-cost internet access in the period of early internet adoption) it now continues to take the form of “champion of ‘community networks’...[offering] free or nearly free computer and internet access to minority and low-income communities...relatively small in scale, focused on the neighbourhood level” (Hampton, 2007b, p. 717). These features also characterise the Computers in Homes scheme in New Zealand and hint at the access and infrastructure focus

that may deflect providers' attention away from the social networks / social cohesion aspect that is the central interest of this study. By the end of the thesis, it will be clear on the basis of the results that the social cohesion dimension is well worth cultivating.

Systematic theorisation is not possible because the field is not yet sufficiently mature, and "the extent and robustness of current empirical research in community informatics is not sufficient to help policy-makers and practitioners" (Loader & Keeble, 2004). However the existence of the community informatics conceptual framework is beginning to bring coherence to the field, with themes becoming apparent that can offer a basis for contrast and comparison as newer studies emerge. For example, Loader and Keeble's meta-analysis (2004) of almost fifty community informatics studies worldwide aimed to synthesise what is known about the extent to which the digital divide is being successfully addressed, given "the significant amount of public funding being devoted to [it]" (ibid., p. 2). Their critical review found a number of themes suggesting optimism is not yet justified. For example, use of public access and support sites by the excluded is generally low, while the location of many public access sites in schools, libraries and other venues may be a barrier to participation. Further to this, ICT training and education that replicate earlier negative feelings of failure are unlikely to attract those who have been categorised as underachievers. Another significant theme was that "sustainability is a problem common to almost all community informatics projects" (Loader & Keeble, 2004, p. 2).

A more recent meta-analysis by Chimera, the Institute for Socio-Technical Innovation and Research at the University of Essex, provides a comprehensive historical and contemporary overview of worldwide community internet initiatives and their effects, aiming to "build on recent reviews such as that of Loader and Keeble" (Gaved & Anderson, 2006, p. 8) and to review "the evidence for the effects of local ICT initiatives on neighbourhood social capital and quality of life..." (ibid., p.2). Gaved and Anderson find that "ICT initiatives support community development of social capital" (ibid., p. 27). Interestingly, however, some evidence suggests that "social capital needs to be in place already for it to be built further" (ibid.). Gaved and Anderson also argue that grassroots initiatives may be more sustainable than those they call "exogenous" (ibid., p. 6) or external, top-down initiatives, and that the former are preferable especially if low-level funding is committed to them over a long term.

CONCLUSION

As promised in the introduction to this chapter, the literature review has sketched out the origins of the digital divide, explored some perspectives on it which influence the way in which it has been addressed by providers and how it has been researched, defined the ways in which terms such as social cohesion are understood and used within this thesis, and explained the field of study called community informatics. Above all, the review has emphasised the numerous ways in which the scholarly and practitioner community has called for a “beyond access” approach to research on community internet, and latterly an indication that more longitudinal research is required. For these reasons, as will be shown in the next chapter explaining the design for this study using case studies where Computers in Homes has been implemented in New Zealand, the present research focused on individual users in social settings. A case study methodology in which the researcher could document the relationship between internet use and social cohesion over time was therefore appropriate from the project’s inception.

CHAPTER 3: METHODOLOGY

INTRODUCTION

In chapter 2, 'outside in' digital divide solutions based on determinist assumptions about internet access achieving predictable outcomes were explored. The present study was prompted by a shift from about 2002 towards understanding the digital divide as an issue affecting individuals who construct an understanding of its relevance to their lives in concert with others in social contexts. The literature review highlighted the need for methodologies that look beyond access and deficit models (Merkel, 2003) in digital divide research. If access to the internet is only one part of the solution, then research should address individual users within their complex social settings in order to better understand the factors involved in the relationship people form with the internet, and, subsequently, with each other.

For the present study the term 'community', often linked with 'the internet' in policy and research, is understood primarily to be a local school-based 'community group' encompassing neighbourhood networks together with friendship, workplace, interest and kinship ties. The research took the form of case studies, a decision made because the research was to take place in a contemporary naturalistic setting of Computers in Homes parent groups in which researcher control is virtually nil, a set of conditions best served by the case study (Yin, 2003). A qualitative approach was designed, focusing primarily on extended interviews with adult participants supplemented by observation of events, meetings and discussions with other key figures such as school principals. A series of phases in the study with two core periods of data collection activity is shown below:

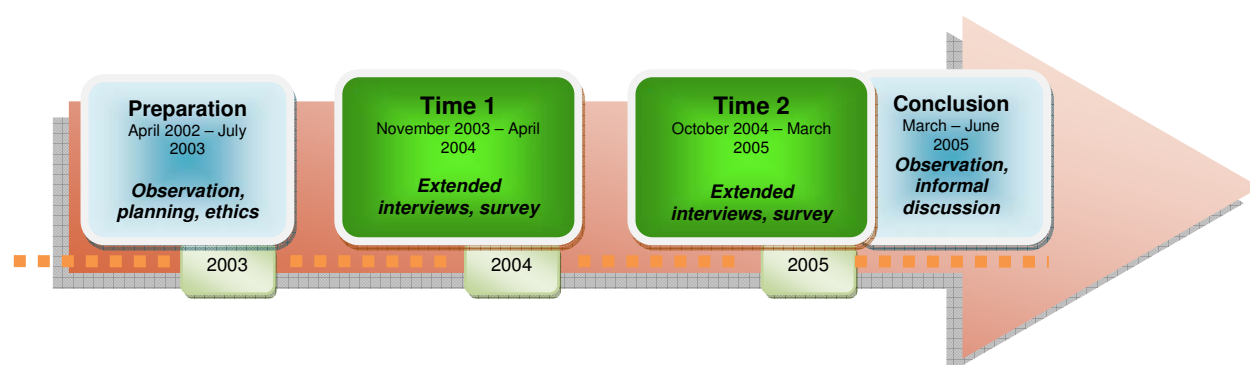


Figure 3-1: Phases in data collection 2002 - 2005

In this chapter, the development of epistemological assumptions about social constructivism that in turn influenced my design of the study is now introduced. Then the logic of the research design is explained so that the rationale behind the planning of two cycles of research will become clear. In particular the ways in which this design was intended to meet the goal of the research, as it comprises two propositions concerning internet access and social cohesion, will be explained.

EPISTEMOLOGICAL ASSUMPTIONS

Beliefs and values arising from my training as a high school teacher from 1978, and practice as a qualitative researcher in family-based settings in the 1990s (J. Williams, 2001), underpin the design and direction of the current research project. The roots of its design extend into the subsoil of my values relating to beliefs about knowledge: how we know what we know. For example, understandings about education and what this meant for teaching practice changed dramatically in the 1970s, a time when previously accepted educational orthodoxies such as empiricism (we learn by observing the external world and recording sensory impressions) were being challenged and overturned by the work of people like Jean Piaget in the 1960s which showed learning is the result of a complex neurological construction process involving not only the senses but trial and error.

In my time of learning to teach, the regimented, highly structured didactic education of the modern era was giving way to a more liberal, progressive approach to learning in which students were given more autonomy as individuals and encouraged, even expected, to embark on learning as a process of inquiry on the basis that telling people facts does not work as a teaching tactic. According to instruction received in New Zealand's teacher training of the late 1970s and my practice in the 1980s, "inquiry-based learning", "discovery learning" and "experiential learning" (Lawson, 2003) were by-words. Effective learning was understood to be founded on what the students themselves bring to the classroom, including first-hand experience and unique world-views; on what they can imagine; and on their active involvement in constructing questions about the world and opportunities to test their ideas. In turn, learning is fostered in an appropriate classroom climate and culture in which group-based activities are a prominent feature of the inquiry-based teaching approach. The terms holistic education and student-centred learning are sometimes used to describe a recognition that emerged after the 1960s, that students learn best when they are viewed as whole, unique individuals rather than mere vessels to be filled.

These educational values and philosophies about knowledge creation arise within a social constructivist paradigm, strongly reinforced through my involvement in New Zealand's Playcentre movement between 1987 and 1995. Playcentre, set up initially during World War Two by New Zealand mothers left alone in the absence of a generation of fathers, seeks to value young children's innate curiosity and creativity rather than regimenting and stifling it, and to do so within a family-based social setting run by parents themselves. Children are encouraged and supported to discover in their own way and at their own speed, in relationship with one another, in a playful, spontaneous approach to the world, and to be open to a self-directed process instead of the one 'correct' way to do things being imposed on them. Thus knowledge in this setting is acquired directly from real situations, a view of learning that has become known as situated cognition (John Seely Brown, Collins, & Duguid, 2001). These are the roots of my values as a researcher.

My research experiences from 1998 developed on these epistemologies in which knowledge is understood as socially constructed. This assumes knowledge is constructed not only on the basis of what people already know (rather than what they are merely told) but also in collaboration with those we know in social settings. Furthermore "we do not construct our interpretations in isolation but against a backdrop of shared understandings, practices...[and] language" (Denzin & Lincoln, 2000, p. 197), and constructivist inquiry "seeks to understand contextualised meaning" (ibid., p. 986). In 1999 I brought this perspective to bear on an interview- and observation-based study of a home parenting scheme (J. Williams, Comrie, & Sligo, 2001) which aimed to capture a variety of participants' situated experiences of mentoring support from parent educators. My views not only on learning, effective bridging of knowledge gaps and how to conduct research on these matters, but also communication in its broadest sense, therefore assume a relativist ontology. There are multiple realities; the educator or researcher is not necessarily in possession of the only, or the correct, reality. He or she occupies a place in a larger process of exploring and expanding knowledge, standing between the known (recorded knowledge) and the unknown (the possibilities that teacher and learner discover together).

Thus social constructivism assumes a subjectivist epistemology - knower and respondent co-create understandings - as well as the appropriateness of a naturalistic set of methodological procedures aimed at bringing together diverse perspectives. In this sense my approach is interpretive, so that "research subjects ... collaborate in displaying key features of their world" (Alvesson & Deetz, 2000, p. 34) and the goal in conducting research in this way is to move towards a unification of the world being examined in such a way that "complexities and

contradictions" (ibid.) are resolved as far as is feasible. The social constructivist paradigm has implications for research design: for the types of and variety of data sought, and for authenticity criteria such as the need for balancing of stakeholder views, perspectives, claims and voices and ensuring these are represented in research artefacts. These principles point toward a qualitative mixed methods approach to issues of interest in my work, and are explained as this chapter unfolds.

PROPOSITIONS AND RESEARCH GOAL

From my earlier experiences as educator and researcher I came to the present research on internet access and social cohesion within the setting of Computers in Homes, a community-based free home internet scheme in New Zealand. The Computers in Homes scheme gives recycled computers and home internet access to selected families who cannot afford to pay for it (refer chapter 1, page 11; also Appendix 5). Piloted in 2001 in three primary school communities in poor urban neighbourhoods and subsequently expanded to more than 200 schools by 2008, Computers in Homes is largely funded by the New Zealand government's Ministry of Education with donations of used computers from the private sector. Computers in Homes, according to information on its website ("Computers in Homes", 2007), aims to ensure every household has internet access and, by this means, to build stronger communities throughout New Zealand. The Computers in Homes community building goal, or theory, about a relationship between internet access and community is neither defined nor operationalised in terms of how the scheme actually works to facilitate this relationship, despite its use of phrases such as "family opportunity" (ibid.) on the website. The following rationale for the study's propositions and research goal enables the ambiguous goal of community building through internet access to be researched empirically by using a specific construct ('social cohesion').

My experiences related in the previous pages caused me to wonder how, or indeed whether, internet access can be linked to social cohesion in a straightforward way. It seemed to me that assumptions about creating stronger communities through putting the internet into more households are, logically, built on other underlying assumptions, such as that internet access implies internet use. To what extent is this likely to be the case? Another assumption underlying the internet access-social cohesion link is that people who use the internet will find it so compelling and necessary in their lives that it becomes indispensable and they may thus increase their use over time. I see this assumption at work within the institutional (government

and Computers in Homes) worldview because one could not aim to build community through internet use, if internet use is not either stable or increasing.

In this way, the foregoing premises began to develop into informal propositions early in the study design process. Yin (2003) argues propositions are an important component of research design because they begin to “tell you where to look for evidence” (ibid., p. 22) and thus put the researcher in a position to assemble appropriate proof and draw credible conclusions on the research goal. My investigation was thus intended to explore the applicability of the following statements:

Proposition 1 (P1): Free home internet access leads to ongoing internet use

Proposition 2 (P2): Internet access is positively related to evidence of social cohesion.

Proposition 1 arises from two strands of reasoning. First, this theory seemed largely assumed by providers (“Computers in Homes”, 2007) at the time this study was being conceived and developed. Second, it is in the interests of those implementing a free home internet scheme such as Computers in Homes to ensure that ongoing or increasing internet use actually occurs, to maximise anticipated community benefits, if Proposition 2 is also assumed to be credible. Proposition 2 was also a starting point for the study because of the evident belief that internet access for all families is critical for building stronger communities. The relationship between internet access and social cohesion is strongly implied in Computers in Homes communications (“Computers in Homes”, 2007) while the government’s social policy agenda has pointed in this direction for a number of years (Department of Internal Affairs, et al., 2002; Ministry of Economic Development, et al., 2004) as shown in chapter 2, especially in section 2.1.8 (pp. 42 - 45).

Similar views about technology access are found elsewhere in international social policy literature (National Telecommunications and Information Administration, 2000) where “being digitally connected becomes ever more critical to ...community participation” (ibid., Executive Summary), in media reports (Twist, 2005) as well as academic studies (Haythornthwaite, 2005). In communities where fragmentation appears to be increasing, the gap that appears to need addressing, in research, policy and practice, is how to generate “cross-cutting forms of social solidarity” (Putnam, 2007, p. 137). Importantly for this study, some research (Pigg & Crank, 2004; Quan-Haase, et al., 2002; Toyama, 2007; D. Williams, 2006), policy (Ministry of Social Development, 2006) and practice (“Computers in Homes”, 2007) takes the view

that social cohesion can be strengthened through building people's access to the internet, as shown in some detail in chapter 2. This view piqued my curiosity.

Therefore a key objective of this research was to establish first of all the extent to which those individuals who volunteered to participate in the present study became regular users of the internet. From that basis, results could indicate the extent to which this use persisted over time, and contribute to a second objective to establish what relationship there may be between internet connectedness and social cohesion. Thus Propositions 1 and 2 set out above are objectives underpinning the goal in this research *to assess how internet access and social cohesion are related in a free home internet scheme*. This goal was operationalised using a longitudinal, mixed method, multiple case study design. Case A and Case B were researched at Time 1 and Time 2, one year apart, using the same group of participants.

The research goal as stated above expresses Proposition 2 most overtly, but Proposition 1 - while separately researchable - was important principally for the fact that it informs Proposition 2. My reasoning here is that assessing the relationship between internet access and social cohesion (Proposition 2) requires an evaluation of the extent to which internet access becomes ongoing internet use (Proposition 1). If this dimension is not specifically addressed, then no conclusions can be drawn about changes in social cohesion that are potentially related to the internet intervention.

Decisions about appropriate proof and the methods designed to obtain it are explained later in the chapter. The next section sets out the qualitative orientation, and proceeds chronologically through the process of conducting the research, including ethical considerations, the sampling method and the sample, data collection methods, and data analysis. The chapter concludes by discussing implications of this design for the results to be found in chapter 4.

INFLUENCE OF QUALITATIVE TRADITIONS

Findings from large-scale longitudinal studies of the internet and society are regularly reported, such as from the Stanford Institute for the Quantitative Study of Society (Horrigan & Rainie, 2002b), the Metamorphosis studies in Los Angeles (Ball-Rokeach, et al., n.d.; Ball-Rokeach, et al., 2001; Gibbs, Ball-Rokeach, Jung, Kim, & Qiu, 2004), and the Pew Internet and American Life studies (Fox, Quitney Anderson, & Rainie, 2005; Horrigan & Rainie, 2002b; Rainie, Fox, Horrigan, & Lenhart, 2000; Rainie & Packel, 2001). However these

studies have different goals that generally seek big-picture social trends using mainly statistical data, and are mainly US based. The social outcomes of internet access, especially those assumed in policy documents such as New Zealand's Digital Strategy expressed, for example, as an expectation that "communities will be strengthened" (Ministry of Economic Development, et al., 2004, p. 6), are arguably best studied using a qualitative orientation that recognises the importance of the specific social context within which the internet is used.

The goal of the present study, relating internet access and social cohesion in the context of a free home internet scheme, is rooted in a constructivist epistemology that primarily seeks "to build a picture of the world from the 'inside'; from the view of the researched" (Tolich, 2001, p. 117). While the social cohesion component of the research goal may be understood and assessed on the basis of quantitative elements such as associational activity (see chapter 2, p. 64), it may also be understood through observing interactions and recording people's stories about what they do, and what they feel about this. Thus a "picture of the world from the 'inside'" (Tolich, 2001, p. 117) and what it means to those within it may be effectively captured through researcher engagement in family and community settings, talking with those involved, in field research using case studies. Considering this qualitative preference, appropriate methods for gathering data on broad questions arising from Propositions 1 and 2 then had to be determined.

My overall plan was to engage with people involved in Computers in Homes on an individual level in face to face settings in order to hear about their experiences and attitudes to free home internet, and to learn about the community groups of which they were a part. For this reason the in-depth interview was the most important data gathering vehicle within a mixed methodology. However as stated above, one of two objectives underlying the research goal was to assess the extent to which Computers in Homes participants became regular users of the internet; thus while the broad orientation of the study was qualitative, there was a place for quantitative data which were gathered using closed questions, mostly rated on a 1 - 5 Likert scale. Numerical data relating to hours spent each week on e-mail, and ratings for different internet goals and activities, for example (refer questions B2 – B8, p. 268), contributed to an overall assessment of the intensity of a participant's relationship with the internet and thus led to conclusions on one of the key objectives of the study. Social cohesion may also be assessed with a combination of methods (explained in section 3.5.2, pp. 114 - 118) so that while the overall orientation is qualitative, networks of mutual support, for example, may be established with closed questions about the number of neighbours known and recognised, and complemented by anecdotes from participants prompted by open-ended interview

questions. A similar defence of a mixed methodology within a broader qualitative orientation is argued by Zorn and colleagues that “using this mix of methods allowed us to capture a richer and more complex sense of “what was going on” (Zorn, Roper, Broadfoot, & Weaver, 2006), a rationale applicable to the mix of methods used in the present Computers in Homes case studies also.

While not a methodological model, the principles of ethnography influenced the intentions set out above – the “what was going on” aspect. In ethnography the researcher “directly observes and participates in small-scale social settings ... *[and]* directly talks with and observes the people being studied. Through interaction over months or years, the researcher learns about them ... their habits, hopes, fears and dreams” (Neuman, 2003, p. 364). An example of the use of ethnography in the field of internet studies is the two year, live-in study of “Netville” (Hampton & Wellman, 1999), a “wired suburb” of Toronto. While extensive survey data were collected using both online and in-person methods, “the ethnographic observations tell much of Netville’s story...serv[ing] as a record of the group perspective” (*ibid.*, p. 489). It was not possible or feasible for me to live in one of the Computers in Homes communities for the present research, yet the close relationship developed between Keith Hampton and the Netville community (Hampton, 2003) as a result of choosing the ethnographic methodology afforded a qualitative richness that I aimed to achieve as far as possible in my inquiry into internet access and social cohesion. I sought to “develop an enriched sense of the meanings of the technology” (Hine, 2000, p. 8) to new internet users within the limits of not being an actual member of the case study communities on a daily basis. Although I came to know many participants quite well (as may be inferred from reading the interview transcripts appended to the thesis, pp. 268 - 280), my relationship with the sites remained formal and defined by the researcher role. To obtain insider perspectives, I opted for “methods that *[would]* take the researcher into and close to the real world” (Patton, 2002, p. 67), including interviews and regular attendance at meetings.

Becoming at least a partial insider (Jorgensen, 1989) in the settings helped to build trust between me and those who agreed to be involved in the research. Relationships were built in a step-by-step process during a year-long preparation phase (see Figure 3-1, p. 77) from April 2002 until the first round of interviews began in October 2003. While not fully involved or immersed in the lives of the communities, I was a regular participant in formal and informal school community events, and came to be seen as part of the Computers in Homes team at these functions. Yet such trust and acceptance brings with it considerable responsibility on the part of the researcher, and an awareness of reflexivity in the role. In endeavouring to

objectively represent the social world of others from within a constructivist epistemology in which “knowledge is socially and culturally produced and historically contingent” (Knuuttila, 2002, Introduction) “the stage [is] set for questioning the objectivity of our scientific representations” (ibid.).

Further consideration of this complexity is given in the next section of this chapter, especially in relation to consent (see page 90), and objectivity in the research (section 3.1.3, page 92), and again in section 3.9.2 (page 130 - 132) in the context of methodological limitations. Qualitative research, by its nature, involves forming relationships with people. Being present as a qualitative researcher involves obligations and responsibilities arising from the fact that the research (and the framing of the research ‘problem’) is an intervention in the setting. In turn, these facts imply a duty of care regarding the impact the study may have, and consideration of whom and what the research is for, and any potential for harm as well as assistance.

3.1 RELATIONSHIP BUILDING AND ETHICS

A series of key events occurred within a short space of time, leading directly to the commencement of the study. These events provided the opportunity for the proposed research to be discussed with key people such as school principals in terms of feasibility, and for me to become known in the settings and to gauge support.

3.1.1 KEY EVENTS IN SETTING UP THE STUDY

- FLAXROOTS TECHNOLOGY CONFERENCE

The “Flaxroots Technology: Communities Creating the Future” Conference, hosted by the Department of Internal Affairs on 11 – 12 April 2002, was held simultaneously in three New Zealand cities (Auckland, Christchurch and Dunedin) linked by videoconference. It was held “first and foremost for communities ... a forum to meet with others and make sense of technological solutions that can assist with the needs of our own communities” (Flaxroots Technology Steering Group, 2002). It was apparent to me in attending this event that the internet was viewed by attendees, including large numbers of community group representatives, academics, and local and national government officials, as an indispensable tool for community level empowerment and grassroots social change. These assumptions

piqued my interest as a researcher, as I happened to be in the right place at the right time as Ian Thomson, director of the 2020 Communications Trust⁷ stated at a Flaxroots conference presentation that “Computers in Homes is under-researched” (Thomson, 2002).

- MEETINGS WITH ‘COMPUTERS IN HOMES’ PERSONNEL

The remark about the need for more research on Computers in Homes led me, at the suggestion of the 2020 Communications Trust director, to contact a researcher who had already been working with Computers in Homes families in Wellington. A vigorous proponent of the scheme, this researcher worked closely with the Computers in Homes National Coordinator, attending launch events and encouraging its implementation. I met with both women in Auckland in June 2002, at which time the broad outline of a possible research project was discussed, and welcomed, in principle. At this time, these Computers in Homes contacts were my ‘go-betweens’, in the sense that they wanted to see some research being done as they had insufficient resources to conduct it themselves, and they began to introduce me and the overall concept of my research to school staff. In this way, school principals knew about me and the proposed research before I arrived to meet with them. The first personal contact I had with the schools was at a parents’ meeting in June 2002, as described below.

- COMPUTERS IN HOMES PARENTS’ MEETING, 6 JUNE 2002

This meeting in June 2002 for Computers in Homes parents and families is a useful example of the participatory culture of Computers in Homes and how it works with a school community. It is described here for that reason, even though it was held at School C which was later excluded as one of the case studies (refer section 3.2.3, p. 100). It was important too because in this early period of project planning, the meeting gave me a very helpful introduction to how the scheme worked, following a standard format that later became familiar to me after attendance at many such parents’ meetings. They are planned and facilitated by school staff, who inform parents of the event and invite them to attend. It was often possible for the Computers in Homes national coordinator to attend as part of a visit to the city, as was the case on this evening. Usually either the staffroom or the school library was used for the meetings held at about 6pm to allow working parents to attend. A guest speaker or other focal activity for the evening is generally planned. Other examples are gifts or

⁷ The 2020 Communications Trust is a charitable organisation in New Zealand, established in 1996, with a focus on “empowering people to use ICT as a pathway to engage more fully in the communities” (2020 Communications Trust, 2009) and a mission “to help ALL New Zealanders benefit from the opportunities of the new digital era - especially from the internet” (ibid.). Computers in Homes is one of the programmes it actively supports.

awards to families presented by the Computers in Homes coordinator for completing training or 'graduating' after a certain period of time; or a talk by the principal showing off features of the new school website.

Held in the school staff room, the June 2002 gathering of about 15 parents and children was informal and friendly; the Computers in Homes national coordinator was on first-name terms with many of those present. On this occasion a representative from Manukau Institute of Technology (MIT) had been invited to talk about pathways into tertiary study, highlighting free MIT computing courses to create awareness for parents of ways in which they could extend their interest in learning about computer use after Computers in Homes. At this point I was introduced by the Computers in Homes national coordinator as another special guest, a researcher from Massey University. I spoke briefly about possible research with volunteers. The last item for the meeting was an opportunity for feedback from parents about any internet problems as well as accomplishments, each parent taking a turn to speak. The formal part of the meeting was fairly brief, and ended with the sharing of food brought by families, and socialising among attendees.

On a related point, families attend training at the school; and in theory, each project consisting of about 25 participating families has six family coordinators who act as mentors to four or five other families. These aspects of Computers in Homes culture – being made welcome on-site at school, and the provision of a network of peer mentors – add to the sense of a community 'family' loosely based at the school.

3.1.2 ETHICS: ACCESS TO THE RESEARCH SITES

Aspects of access to the case study sites for the present research, as well as participant consent, should be examined in light of the position Computers in Homes takes regarding research. It became apparent at the Flaxroots Technology Conference in 2002 that the 2020 Communications Trust, which funds Computers in Homes, wanted more research to be done on the outcomes of Computers in Homes. The need to document the achievements of a community intervention is a typical characteristic of externally driven community internet initiatives (Gaved & Anderson, 2006, p. 6) since a demonstration of these is potentially useful for securing further financial support. In this sense, the pathway from me to the Computers in Homes sites was facilitated by the enthusiasm of Computers in Homes staff and the 2020 Communications Trust for documented research, because it is in the interests of project continuation. The process of establishing relationships, trust and access to the Computers in

Homes sites was facilitated by the project providers themselves: for example, the Computers in Homes coordinator would invite me to scheduled meetings with school principals. This amounted to at least tacit CIH endorsement of my proposed research.

Furthermore, care was needed in my study over research participant consent because of the way in which Computers in Homes operates. Its standard practice is to have parents sign consent to an interview "for research and evaluation purposes" ("Computers in Homes," 2001) as a condition of joining the scheme. The agreement could be regarded as offering no choice, because if parents want the free computer and internet keenly enough, then their feelings about being research participants may have to be set aside, and consent therefore may not be given freely. Potential participants might infer that because my study was evidently encouraged by Computers in Homes, and Computers in Homes requires family participation in research, then in effect, participation in my research was expected. While it could be argued that if parents do not like the conditions of the Computers in Homes agreement they need not involve themselves in the scheme, in a situation where families want the internet at home but cannot afford it, there may be no option. Thus as members of a school community governed by a Board of Trustees, Principal and other senior staff who endorsed the Computers in Homes scheme that carries with it the expectation that parents will agree to an interview, they may have concluded they must agree to being research subjects. However in practice, while parents do sign an agreement as a condition of joining Computers in Homes, my observation at the time was that the agreement appeared to be viewed as a statement of an ideal expectation, a set of guidelines rather than a requirement; and Computers in Homes was gently encouraging and supportive towards families, rather than officious.

Moreover, irrespective of a form of consent being in place as part of Computers in Homes practice, I made no assumptions about parents' wish to be involved in research, as will be shown in section 3.1.3. As is normal in standard research ethics procedures, the principles of informed consent were carefully followed. Therefore, while the progress of this research project was facilitated to a degree by the fact that groups of families expected to be asked to share their experiences because research was mentioned in their agreement, participation in this particular research was never expressed to them as being a requirement. I took great care to distinguish between this study and their involvement in Computers in Homes, as follows.

Following the Massey University Human Ethics Committee (MUHEC) requirements for the conduct of ethical research, I prepared information sheets and consent forms (Appendices 1 and 2 of this thesis, pp. 263 - 265) for potential participants, and briefed the MUHEC in an

ethics application about the intended research. Approval was given by the MUHEC in November 2003, with some minor amendments to the wording required, but this did not prevent commencement of the research. The final approval letter was received late in 2004 (refer Appendix 3, page 266). Nevertheless I did not assume that families should be expected to be consenting volunteers. I spoke to groups, prepared information to give them in writing and to discuss at meetings, spoke to them by telephone to further explore their interest and willingness, and then at scheduled interview meetings I would go through the written information (Appendix 1) again, with a consent form (Appendix 2) that they would sign if they were happy to proceed. If I had encountered any concerns over participation I would not have proceeded to an interview. An illustration of my willingness to take people's views and preferences into account is that when two volunteers said they were not comfortable with the use of a tape recorder, I took notes instead.

Finally, school managers had control over the process if they chose to exercise it, although this varied in practice. At School C, I arranged to meet with the full Board of Trustees through the principal:

To: Jocelyn Williams
Subject: Fwd: C in Homes

>>> On 17/06/2003 at 14:48, "R" wrote:
 Hi Joce

Have just spe a little wantoken to Karen. she will aim to get onto your request tomorrow. The list will be as accurate as we can make it. Like a couple of issues in this project the E Mail list is perhaps a little tired and needing a revamp.

Anyway we will see what transpires. We are sending letters out tomorrow making those people that haven't met their contract obligations aware of the need to settle overdue accounts. The deadline for this will be the first week back next term. That gives them a little over four weeks to sort the issue out.

Those that don't will be dropped from the programme and we will find new people to come aboard. This may well be a good thing with some fresh faces breathing enthusiasm into the project.

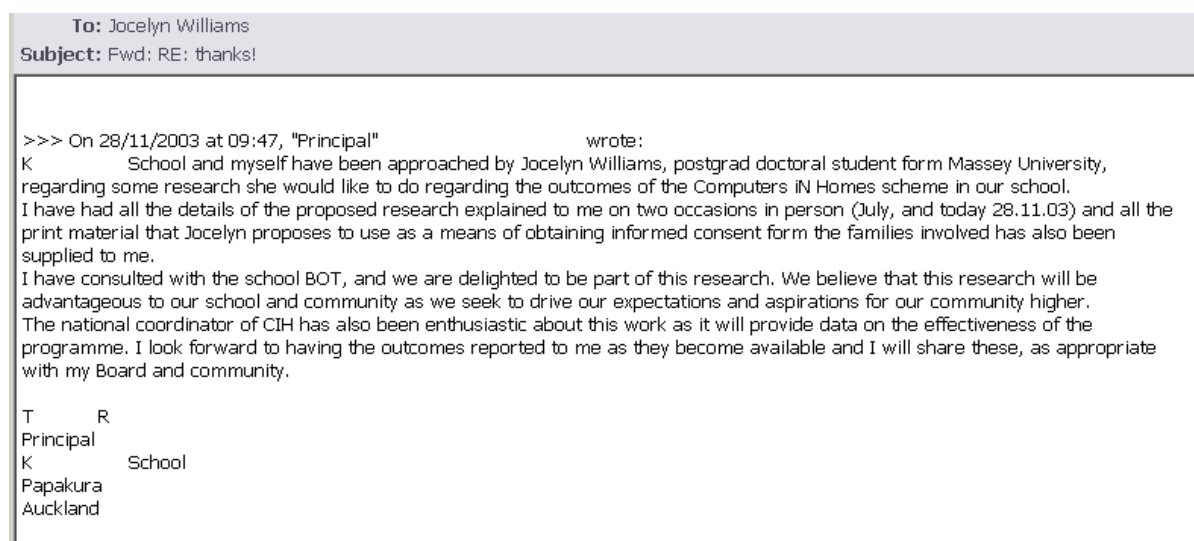
Don't worry about the nuts and bolts issues as I'm sure we can handle things from this end or we will see what Di can do to assist.

You are booked into the BOT Meeting on the 24th July. How much time would you need? Time isn't a real problem I will just work you into the agenda amongst some other items on that night, that way you hopefully won't have to sit through some rather boring material.

Regards R and K

In exploring the feasibility of the proposed study, challenging questions were put to me by Board members regarding how I would approach the families, such as whether I would have information sheets translated into other languages. In this way the Board of Trustees fulfilled a role as ethics gatekeepers, taking responsibility for the vulnerabilities of families in their school. By contrast at Case B, the principal gave his approval on behalf of the Board of Trustees; while at Case A, the two co-principals appeared to simply accept that research was to be carried out as part of the Computers in Homes *modus operandi*, with no further questions. In all cases it was apparent that senior staff and Boards of Trustees saw the

prospect of research as a constructive process that could be used to feed into the schools' evolving ICT strategy. One example:

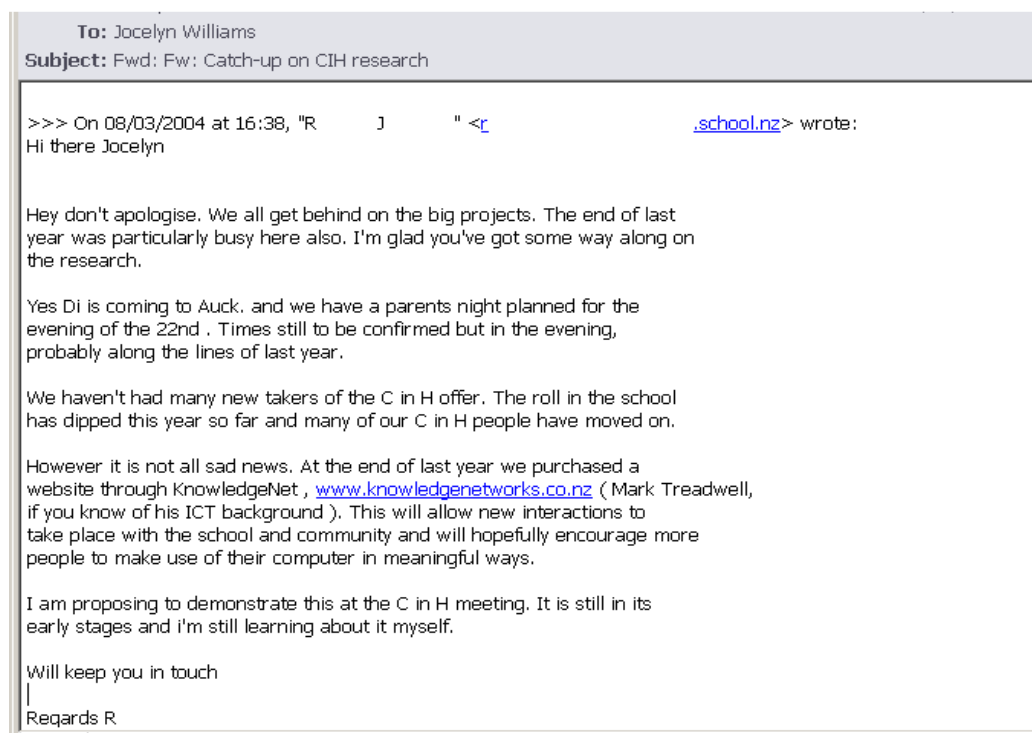


At each case study site, interest and enthusiasm from the Computers in Homes community of parents and school staff thus became apparent to me through these processes, and I progressed to speaking at parents' meetings about my proposed research, seeking feedback, and moving towards a point where I sensed I had the support to move on with project development. At each meeting, those present included the parents/caregivers and their children, senior school staff, Board of Trustees members and Computers in Homes staff. I would outline the purpose of the research and the nature of what was involved (essentially, interviews), and how the results could be used by the school. Over tea and supper later, I would speak with individuals and answer questions. In most cases I found parents were positive about being involved, and even keen to be interview subjects, a response that may be linked to Gaved and Anderson's belief (2006) that a host community often welcomes a community internet initiative. An implication could be that a positive affect is involved for potential participants when they are approached to contribute to research, so that excitement over the novelty and no-cost equipment spills over into their responses to the researcher. Therefore, comment is made about the potential for social desirability bias in section 3.9.

- INFORMED CONSENT

Thus informed consent in this research was achieved not by a single event but through a process. As explained above, parents were given a verbal overview of this research at meetings in each case around the time Computers in Homes was launched. In general, when a new group of up to 25 families becomes involved in Computers in Homes, a launch event is

organised to generate excitement, involvement and commitment. The standard launch event (refer section 3.1.1, page 86) is, like the regular parents' meetings, an early evening gathering at the school. At this type of gathering I would be invited to speak to the group for a few minutes, giving an overview of the proposed research. This was a first step in informing potential participants. Here is an example of the types of interactions leading to my attendance at school meetings:



Each school gave me lists of participating families and contact details. Allowing for a delay of three or four weeks after the launch event so that families could begin using the internet, I then telephoned them to explain again about the project, invited them to participate and arranged suitable meeting times for those who were happy to do so. This was a second opportunity to explain what would be involved, once I had made contact with a parent or caregiver. Then at the first interview, time was given at the start for a further explanation of the purpose of the research, and what the participants would be asked to do. I gave parents an information sheet (Appendix 1) to keep for reference, with particular attention being paid to participants' rights. At this point if parents were happy to proceed, they were asked to sign a consent form (Appendix 2).

3.1.3 OBJECTIVITY AND OWNERSHIP

As shown in Figure 3-1 on page 77, data collection did not begin until November 2003 and ended in March 2005, a period of about 17 months during which a large number of research interactions and opportunities for observation and reflection occurred. The overall approach, as explained in the introduction to this chapter, was qualitative while the research goal implied the need for a combination of methods that would allow dialogue between different types of data. For example, the proposition that internet access leads to ongoing internet use is ideally assessed by analysis of a combination of quantitative and qualitative data over a period of time. Additionally, the role of the case study researcher is to assist readers in the construction of an authentic representation that is balanced and inclusive. All stakeholder views, perspectives and concerns should be given space, so that the research is not biased; and throughout longitudinal research, a strict endeavour must be made to maintain a position of academic disinterest to the extent that this is possible. However mixed method multiple case study research is challenging because one must not only faithfully record and aim to understand the cases being studied, but also interact with participants as owners of the issues and solutions. The researcher is therefore constantly balancing a need for scrupulous objectivity with an ability to interpret and infer.

This balance requires that “the researcher should look through both emic and etic lenses” (Lindlof & Taylor, 2002, p. 80), terms coined by ethno semanticist Kenneth Pike (Patton, 2002, p.267), so that “when we take the emic view, we see the scene through the meanings that the members attribute to their own communicative actions (ibid.). On the other hand, with an etic perspective, “we see the scene through categories derived from disciplinary knowledge and theory, or in terms of ...objective characteristics that are important to our purposes as a researcher” (ibid., p. 81). Yet, as Greene (in Denzin & Lincoln, 2000) points out, in social inquiry using a constructivist perspective in which the point is not to “discover lawful properties of the external world” (ibid., p. 986) so much as to obtain people’s own understanding of their experiences, their “constructions of meanings in their own contexts” (ibid.), the inquirer “cannot know the meanings of another’s life experience, but only the inquirer’s own inscriptions or representations of said meanings” (ibid.). Therefore

Interpretivist, constructivist inquiry is unapologetically subjectivist – the inquirer's worldview becomes part of the construction and representation of meaning in any particular context. Inquirer bias, experience, expertise, and insight are all part of the meanings constructed and inscribed. (Greene, J.C., in Denzin & Lincoln, 2000, p. 986)

I was aware of this reflexivity, and given the focus on gathering insights from new internet users in this study especially in face to face interviews, it was important at the same time for me as researcher to continually recall and return to the discipline of the study's goal and objectives, so that it was always a consciously directed process without closing off serendipitous research moments either, when unexpected revelations or new perspectives became apparent that provided 'aha!' moments. A continual iterative process of comparison and contrast between different sources and types of data (explained further in section 3.7.2, page 126) had to occur side by side with this conscious 'professional disinterest'.

- WHOSE RESEARCH?

Yet a close involvement by a researcher implies a form of intervention in the setting, however carefully it is managed. In chapter 2, I referred to the different types of control and ownership that may apply to internet initiatives (section 2.1.5, page 37). According to Gaved and Anderson (2006), four agents or agencies may exert ownership in community ICT⁸ schemes: (1) the host community, (2) an individual within the community, (3) a partnership of stake holding organisations, or (4) an external body, for example government (ibid., p. 6). Gaved et al primarily focus on the first, which they term a grassroots or endogenous initiative, and the last, which they term a top down or exogenous initiative. One significant difference between endogenous and exogenous ICT initiatives is that

There would appear to be less reflective practice on the part of grassroots initiatives – perhaps because there is no perceived need to analyse impact in a structured manner: the main task is to ensure the network itself runs, and impact is judged by the activists in the community often on qualitative feedback gathered informally. Exogenous initiatives / projects are often audited and hence are more likely to be required to analyse their effects to satisfy funding sources; also 'analysing impact' may be one of the goals of the intervention. (Gaved & Anderson, 2006, p. 8)

On this basis, then, an exogenous agenda applied in the case of the present study, especially in view of parents being required to formally consent to being researched as part of the Computers in Homes agreement. This practice indicates the importance attached to researching the outcomes of Computers in Homes when an outside agenda prevails. While it may be more appropriate for less formal research to be negotiated with a suitable researcher by those in the setting, an endeavour to achieve a shared research agenda may be problematic, since

⁸ As explained in chapter 1 in the section on Key Constructs (page 8), although my preference is to narrow the subject matter to 'the internet', note that I use "community ICT" where the source prefers that term.

The democratised research ideal is shown to rest on the fantasy that power can be shared and the differing positions occupied by the researcher and researched neutralised ... [which] fail[s] to recognise the power the researcher may retain in the research interaction despite attempts to allow participants to set the agenda. (Mauthner, Birch, Jessop, & Miller, 2002, p. 43)

In the case of the present research at Computers in Homes free home internet sites, the view of Mauthner and colleagues suggests that, despite my intention to adopt an impartial position as neither more nor less than any stakeholder, the very fact that I was the researcher potentially put power in my hands. This possibility was minimised to the extent it was possible to do, by consciously withdrawing – in an abstract sense - at all times to a place just outside the periphery of events at meetings, being a ‘fly on the wall’, and by staying true to the intent of the research goal in all situations such as one-to-one interviews. Finally, while Computers in Homes processes and policies (for example agreement over rules of computer use) to an extent constrain parents’ autonomy initially, a fundamental tenet of the scheme is an expectation that communities will become empowered to begin directing their own initiatives once the initial implementation period has passed. This characteristic of community internet providers (Gaved & Anderson, 2006) suggests the larger goal of exogenous providers is always to ensure power in the setting is retained by the grass roots community members.

Using qualitative methods means learning to live with uncertainty and ambiguity (Lareau, 1996, p. 198). Thus it has been said that the process of qualitative inquiry is like a craft, so that “qualitative researchers [are like] bricoleurs – workers who assemble useful and valuable forms from available, fragmentary resources to meet situational needs” (Denzin & Lincoln, cited in Lindlof & Taylor, 2002, p. 19). This process is described as being “as much creative, intuitive, and improvisational as it is systematic” (ibid.) and involves being ready at short notice to attend meetings, for example, or interviews and events that would not be available as research opportunities again.

This research orientation suited the study well, because “the strength of qualitative data is that it can illuminate the meaning of events” (Lareau, 1996, p. 224). The demands imposed by being a “professional stranger” (Lindlof & Taylor, 2002, p. 132), neither fully part of the worlds I was researching nor fully separate from them either, required awareness of reflexivity (see section 3.9.1) in the role. I was an outsider in multiple settings, seeking to be at least partially an insider in order to understand while also developing rapport, yet endeavouring to retain a level of professional disinterest.

3.2 THE CASE STUDY SETTINGS

For the purposes of this study, community is understood and investigated through the specific form of 'community group', as in the group of families selected by a school to be recipients of the Computers in Homes free home internet. In this sense 'community group' is prescribed in the present study as a number of families who share an interest as members of a particular intake of families at a particular school location, all experiencing free home internet for the first time together.

The unit of analysis for the study is therefore the group of families involved in the Computers in Homes free home internet scheme in selected cases. Initially, research took place at three such sites in suburban Auckland; however ultimately two sites (cases) became the primary focus of the study. The reasons behind this decision are summarised here.

The research preparation phase from mid-2002 to mid-2003 (refer Figure 3-1, page 77) involved a good deal of relationship building at Computers in Homes sites in south Auckland. In the course of meeting school staff and attending events, I was able to create a foundation for a study involving, potentially, three Auckland school communities identified in Figure 3-2 on the next page. As events evolved, however, School C became less viable for research purposes because it had been a Computers in Homes pilot school in 2000 and was in 2002 endeavouring to re-launch the programme among a new set of families. However only a handful of parents joined Computers in Homes in the new intake, and of those only one was interested in the research I proposed. Therefore the study focuses on two sites, Case A and Case B where the majority of research participants were available, and while "multiple-case designs may be preferred over single-case designs" (Yin, 2003, p. 53) and by inference the more case studies the better, "the analytic benefits from having two ...cases may be substantial" (ibid, p. 53). School C served only as a reference point for background information and norms of Computers in Homes practice because the scheme had been established there for some time, rather than being a case study in its own right.

While the cases were neighbourhood based, the research did not encompass whole neighbourhoods but rather, selected families within them who were all involved in the Computers in Homes scheme. Persons included in the research in each case were volunteers from lists of families recently recruited to the Computers in Homes scheme supplied to me by school staff; data collection was confined to these individuals, all directly involved in

Computers in Homes. Case A and Case B are now described in terms of population and general characteristics. A brief backgrounder on School C is provided to establish some facts even though it has not been treated as a complete case study.

3.2.1 CASE A – DECILE 1

Until 2004, Case A existed as two schools on one site in Clendon, a relatively new suburb in an outlying coastal, industrial region of suburban Manukau (see Figure 3-2), a district in the larger Auckland metropolitan area. Clendon grew from large subdivisions of cheap group housing built in the early 1980s. Many houses dating from that time now appear run down; the newer ones are crowded together in raw, unadorned streets. Almost half of the study participants came from this community.

Located between Auckland's southern motorway and a tidal mudflat coastline, Case A at Clendon has been the site of a Housing New Zealand Corporation (HNZC) Community Renewal initiative since 2001, as its rapid growth and population in-flow has resulted in a number of social problems such as poor educational achievement, high unemployment, poverty and a high incidence of violent crime including child abuse. Here, the government's housing agency "recognises community capacity and confidence building are essential if individual residents and community groups are to take greater responsibility for the wellbeing of their communities ... rather than take full responsibility for capacity and capability building in communities, Community Renewal acts as a catalyst" (Housing New Zealand Corporation, 2006, 'Overview' section).

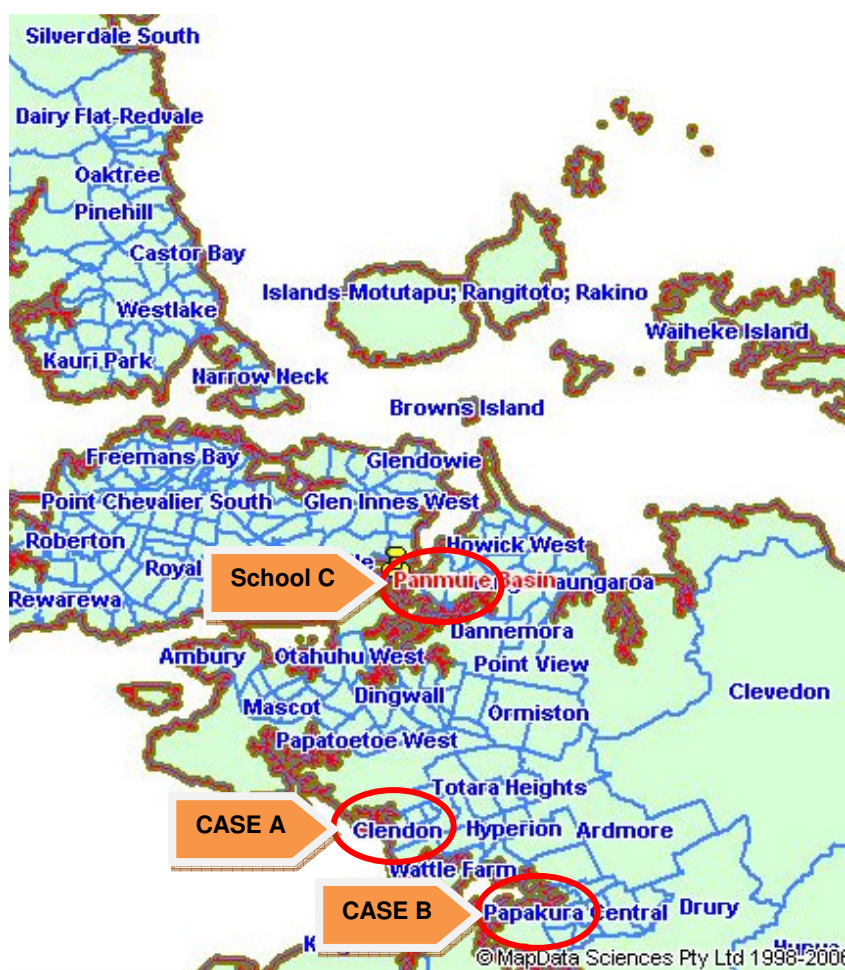


Figure 3-2: Auckland region showing research site locations

The two schools on this site (one, junior primary classes, and the other, senior), operating from the same street address, have historically drawn on a single neighbourhood. However a restructure into two distinct, separately located schools occurred from the end of 2003 when one school moved to a brand new, state-of-the-art facility a few streets away, creating two entirely separate mixed age schools. Although many staff and families from the original single school moved to the new school premises, in practice they all still belonged to a single close community, still participated together in community and school events and operated very much as two “arms” of a single educational venture in the same suburban locality. When the current research began the families all belonged to a single school. For these reasons it became simpler as the research proceeded, even though the school divided in two, to consider all the participants in this grouping as members of Case A.

Issues arising from the restructure coincided with the launch of Computers in Homes in October 2003, so that broader organisational distractions conflicted somewhat with the

practical aspects of establishing the free home internet scheme. For example, the question of just who was responsible for day-to-day Computers in Homes issues became unclear, leading to a period of disarray in the scheme at Case A from mid 2004 to mid 2005. Additionally, accountability issues were exacerbated by the fact that Computers in Homes was one of a raft of schemes being offered under the aegis of the Housing New Zealand Corporation (HNZC) Community Renewal project. Within a broad social services umbrella, the HNZC Community Renewal Project Manager had established a HNZC Information Centre in a house converted from its original use as a standard suburban family home. Located near the school, it had a welcoming look despite its government agency function, and appeared to be a hub of activity in the neighbourhood. It seemed natural enough for Computers in Homes to be offered within this context, whereas usually a school is directly responsible for the administration and oversight of the scheme. In this case, HNZC appeared to consider Computers in Homes as a special project under its own management. Therefore responsibility for implementation and long term continuity were blurred both by the school restructure and HNZC's desire, expressed to me by the HNZC Community Renewal Project Manager, to use Computers in Homes as one tactic in a larger strategy aimed at overcoming neighbourhood social exclusion.

To: Jocelyn Williams
Subject: Fwd: RE: CIH - meeting last week

>>> On 07/08/2003 at 11:36, G wrote:
 Hi Joce,
 I feel quite comfortable at this stage with having you involved with the CIH project but as you mention it is really important that the families involved get to feel the same way. We need to make every effort to assist them to see the worth of your role and the see potential benefit to others in future projects. I will keep you informed as to what we do next. I will be talking with the principles and Maryanne once the budgets are approved and making contact (probably via Waina) with you then for the launch event.

Cheers
 G

Computers in Homes project staff intended that the 25 new families in this area for whom funding was available should be recruited via the two schools. However in practice, the schools decided to limit the scheme to 20 families in total, for reasons that were not apparent. Further, the project champion (a key administrative role in Computers in Homes) was the secretary of the local Residents' Group, which had an office in the HNZC Information Centre. The first meeting to plan the setting up of Computers in Homes at Case A was held there, attended by representatives of all interest groups: school principals, the Residents' Group,

HNZC, Computers in Homes, and parents. In this way it may be inferred that Computers in Homes staff intended that the schools, Computers in Homes and HNZC could work collaboratively. Thus this research site had a complex social ecology including school politics, educational priorities, Computers in Homes goals, and government agency (HNZC) agendas.

Of 20 potential participant families from the two schools at Case A, twelve parents stepped forward to become participants in the present study, and later, three more expressed an interest in being interviewed.

3.2.2 CASE B – DECILE 1

The Computers in Homes scheme was being launched for the first time at Case B at about the same time as at Case A in October 2003. Located in Papakura (population 40,000), on the southernmost, semi-rural fringes of the greater Auckland area, this school is a troubled community, bordered on the southern side by lifestyle blocks of the wealthy.

Papakura district has had a significant Māori and Pacific Islander population. Just prior to the present research, the area had “24.4% of people [who] belong to the Māori ethnic group compared with all of New Zealand at 14.7%” and “a larger proportion of Pacific peoples (7.9%)... compared with the whole of New Zealand (at 6.5%)” (Statistics New Zealand, 2001, 'Ethnic groups' section). Also, the population was younger with “25.5% of people (10,350) in the Papakura District aged under 15, compared with 22.7% for all of New Zealand” (2001, 'Age and sex' section). The Case B school's special character at the time of the research is best illustrated by its ethnic make-up: seventy-five percent are Māori, 14 percent were European, ten percent Pasifika (Pacific Island Polynesian), and one percent Indian. For New Zealand as a whole, the figures for Māori and Pākehā are roughly the reverse. The proportion of Māori (three quarters) and Pacific Island students (one tenth) is also much higher within the school than it is in the surrounding district, a factor that influences school culture and practice: for example it runs a Māori bi-lingual class and two “immersion” classes conducted entirely in Te Reo Māori⁹. Also, given that there are higher rates of reliance on welfare, higher fertility rates (Smeith & Dunstan, 2004) and related social issues among Māori and Pacific Island families than other ethnic groups, it could be expected that this school may have to manage a greater share than other schools of struggling families and troubled children.

⁹ The Māori language

At the time of the present research, Case B had a large school roll, and, like all schools that qualify for Computers in Homes, is rated by the Ministry of Education as decile 1 (Education Review Office, 2001) - refer chapter 1, page 8 for an explanation of decile rankings. According to official statistics, in 2001 school pupils at this site numbered 420 (Education Review Office, 2001) and the roll had grown to 488 by 2003 (Principal B, personal communication, 27 November 2003). Furthermore the principal stated at that time an expectation that the school roll was projected to grow to more than 500. In New Zealand, a primary school of more than 500 pupils is very large. Twenty families from Case B joined Computers in Homes at the October 2003 launch; of these, thirteen caregivers became involved as participants in the research.

3.2.3 SCHOOL C

School C was originally intended to be the principal research site for this study. Computers in Homes was already fully established here when the current study commenced in 2003, as it had been a Computers in Homes pilot school since 2000. The Computers in Homes scheme was familiar to the school community, and so much a part of the school's daily life that the teacher aide in charge of Computers in Homes, and working in administration at the school, was herself a Computers in Homes graduate, and knew all the families and computer issues comprehensively. By 2003 the school was preparing to involve a new group of families who would inherit computers no longer being used. This meant that the timing was suitable for research to begin as the new families experienced the internet at home for the first time.

In practice, the process of "re-launching" Computers in Homes with a new set of families became complex here. A re-launch is by its nature a more low-key process compared to the excitement of a project launch with a large group of families in a new setting. Ultimately few (perhaps six, not the desired 25) came forward showing an interest in joining the scheme, and it was difficult for me as researcher to establish contact with any of them. Ultimately only one parent became involved, and thus the project became focused only on Case A and Case B.

3.3 SAMPLING STRATEGY

Sampling was limited first by the fact that in 2002, only three Computers in Homes school programmes existed in New Zealand, with two new ones being launched in Auckland as I

began to develop the study. Since that time the number of Computers in Homes schools has risen to about 200, but at the time of establishing the study, I was guided in approaching sites by what was offered to me by the Computers in Homes national coordinator. Second, sampling was limited by the fact that the potential research population (as represented by the lists of names and contact details supplied to me by the schools) was defined in the first place by decision making at each school over who would be involved in the Computers in Homes scheme. School managers would select those families from lists of volunteers, who by their estimation would benefit the most from free internet access. These decisions were determined by criteria I was not privy to, but are likely to have included family circumstances, and the child or children's need for more educational support and opportunity.

Another critical sampling factor was the availability of contactable families. Of the lists of names and numbers supplied to me by schools, only half to two thirds responded to my telephone calls; repeated attempts even at different times of the day proved fruitless in some cases. A range of reasons for the low response rate included calls not answered, messages not responded to, numbers no longer available, incorrect numbers listed, or mobile numbers discontinued. Therefore at Time 1 of the study, a potential group of up to 25 families at each school became in actual practice 12 representatives of families at Case A (generally one parent from each family), and 14 parents from Case B. Incomplete data for some of these participants reduced the numbers at Time 1 to nine parents from Case A and 13 from Case B.

Taking these factors into account, sampling was based on purposeful selection using an "opportunistic" sample (Patton, 2002, p. 244). In this study, circumstances required that the sample be obtained by "following new leads during fieldwork" (ibid.) within low decile suburbs already designated by Computers in Homes decisions. Research activities simply followed in the wake of two new Computers in Homes scheme launches, and one scheme re-launch.

Originally, I had hoped that as many as possible of a potential 50 or more parents from schools at Case A and B could be included in the study, but in practice, a total of 30 parents contributed directly in some way to the research over the full length of the data collection period. I regarded this number of people as sufficient since, as Patton points out, "the validity, meaningfulness, and insights generated from qualitative inquiry have more to do with the information richness of the cases selected and the observational / analytical capabilities of the researcher than with sample size" (2002, p. 245).

3.3.1 PROFILE OF THE STUDY SAMPLE

At Time 1, from November 2003 when the largest numbers of individuals were involved as data collection began, the profile of the group as a whole was as follows:

Core participants at Time 1 N= 26
85% mid-20s to mid-40s
20 Female, 6 Male
50% no formal qualifications
61% below NZ average income
42% Māori, 35% European, 23% Pasifika

Table 3-1: Time 1 participant profile

The complete number of research participants involved in the study was 30. However those participants coded 27 – 30 in Table 3-4 were involved at the “tail-end” of the research because they expressed a specific wish to contribute; they were therefore not involved in the early stages and thus not suitable for the subsequent analysis which addressed the cases over time.

Data collection at Time 1 therefore focused on predominantly female, non-European participants in the 26 - 45 year age group, with low educational achievement and lower than average incomes. The average annual wage in New Zealand in 2002 was about \$36,000 before tax¹⁰. Given this average for 2002, there were anomalous cases of higher than expected annual incomes in the sample for this research, as Table 3-2 shows. For example, one wonders how those with household incomes of \$60,000 - \$80,000 were accepted as suitable candidates for Computers in Homes in a scheme aimed at low-income families. It may be that reports of high household incomes were exaggerated or erroneous due to self-reporting. Finally, the ethnic mix reflects that of the South Auckland suburbs in which the study took place, where there are higher percentages of Māori and Pasifika families and lower proportions of European people than in New Zealand overall.

¹⁰ This figure was based on data which included those on the minimum legal wage at that time (\$10.25 an hour) and high-income earners (Udy, 2007).

Participants numbered 27 – 30 of the total sample, as well as 2, 7 and 11 were disregarded in the final analysis since their data were incomplete for various reasons, and participant 26 was also excluded since she was the only one from school C. Therefore, where findings are presented for Time 1, data are generally included from 22 parents altogether. A more detailed profile of the participant group is shown in Table 3-2 following this page.

CODE N = 26	Case	Age	Education	HH Income	Family role	Ethnicity	Time 1 N = 22	1 st interview date	Time 2 N = 13	2 nd interview date	Time 1 & 2 N = 9
1	A	26-35	SC passes (Year 11)	<10k	Mother	European/ Māori	•	11/11/03	•	13/10/04	✓
3	A	36-45	6 th Form Cert. (Year 12)	10-20k	Mother; wife of #27	European	•	12/11/03	•	13/10/04	✓
4	A	36-45	Attended HS (Year 10)	20-30k	Father, husband of #5	Maltese	•	12/11/03	•	29/11/04	✓
5	A	36-45	SC passes (Year 11)	20-30k	Mother; wife of #4	Samoan	•	12/11/03			
6	A	36-45	Attended HS (Year 10)	10-20k	Mother	Māori	•	18/11/03	•	9/11/04	✓
8	A	26-35	Tertiary	30-40k	Mother	Māori	•	25/11/03	•	29/11/04	✓
9	A	36-45	6 th Form Cert. (Year 12)	10-20k	Mother	Māori	•	25/11/03	•	25/11/04	✓
10	A	26-35	6 th Form Cert. (Year 12)	10-20k	Father	Samoan	•	27/11/03			
12	B	36-45	Attended HS (Year 10)	60-80k	Father	Māori	•	15/12/03			
13	B	36-45	Tertiary	60-80k	Mother	European	•	22/12/03	•	28/01/05	✓
14	B	36-45	Attended HS (Year 10)	40-50k	Mother	Māori	•	15/12/03			
15	B	26-35	Attended HS (Year 10)	<10k	Father	Māori	•	22/01/04			
16	B	36-45	Attended HS (Year 10)	20-30k	Mother	Māori	•	29/01/04			
17	B	36-45	Attended HS (Year 10)	40-50k	Mother	European	•	29/01/04			
18	B	26-35	Attended HS (Year 10)	20-30k	Mother	European	•	5/02/04			
19	B	36-45	Attended HS (Year 10)	30-40k	Mother		•	11/02/04			
20	B	26-35	Attended HS (Year 10)	10-20k	Father	European	•	4/03/04			

21	B	26-35	SC passes (Year 11)	60-80k	Mother	European	•	11/03/04			
22	B	26-35	6 th Form Cert. (Year 12)	80k+	Mother		•	11/03/04			
23	B	56-65	SC passes (Year 11)	20-30k	Grandmother	Māori	•	1/04/04			
24	B	56-65	Attended HS (Year 10)	20-30k	Grandfather	Cook Island	•	1/04/04	•	10/02/05	✓
25	A	36-45	Attended HS (Year 10)	20-30k	Grandmother	Māori	•	2/04/04	•	22/11/04	✓
27	A	36-45	SC passes (Year 11)	10-20k	Father; husband of #3	European			•	13/09/04	
28	B	36-45	Attended HS (Year 10)	20-30k	Father; husband of #18	European			•	9/02/05	
29	A	36-45	Attended HS (Year 10)	-	Mother; wife of #30	Niuean			•	25/02/05	
30	A	36-45	Attended HS (Year 10)	-	Father; husband of #29	European			•	25/02/05	

Table 3-2: Profile of research participants

As mentioned previously, taking into account incomplete data (Participants 2, 7, 11 and 27 – 30) and the decision to disregard Participant 26 from school C, data from nine participants at Case A¹¹ and thirteen from Case B¹² are addressed in the discussion of results. Shaded cells in Table 3-2 above indicate the total of nine participants who contributed to Time 1 and Time 2.

As in a more recent study of computers in education in Columbia (Barrera-Osorio & Linden, 2009) where an attrition rate of 37% over two phases of research was attributed to “high rates of migration” (ibid., p. 9), a major contributing factor to the sample attrition in the present research was household transience, detail on which is provided in chapter 4, section 4.1.2 (page 152) and discussed in chapter 5, section 5.1.1 (pages 216 - 217).

¹¹ Participants 1, 3, 4, 5, 6, 8, 9, 10 and 25

¹² Participants 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, and 24

3.4 MIXED METHODOLOGY

The assumptions, propositions and goal of the study as set out in the introduction to this chapter, pages 78 - 82, are now re-visited. There, I explained the assumptions about internet access and social cohesion expressed in the literature that in turn led me to frame two propositions to guide the investigation:

Proposition 1 (P1): Free home internet access leads to ongoing internet use

Proposition 2 (P2): Internet access is positively related to evidence of social cohesion.

Together, these propositions form separate objectives underpinning the research goal, to assess how internet access and social cohesion are related in a free home internet scheme. In the introductory section mentioned above, the rationale for these propositions was defended through the logic that if P2 (assumed in social policy discourse, as shown in the literature review) is valid to any degree, then P1 must also be assumed because if a relationship is to exist between internet access and evidence of social cohesion, then internet access must lead to ongoing use. If internet use does not become ongoing or if it falls away, then any evidence of changes to social cohesion during the time an internet intervention is put in place must be attributable to something else.

Although the unit of analysis in this multiple case study is the group of families involved in Computers in Homes at each research site, the goal of the study actually addresses three levels of social action. First, at the micro level, investigating any social outcomes of internet access involves research among *individuals* within households interacting with the internet, as well as each other and their wider networks, and their feelings and attitudes about these processes. Next, following Friedkin (2004), the meso level of social cohesion involves *group* level conditions and outcomes as well as individual responses. Group level conditions may include the number and pattern of interpersonal ties and networks generating the individual behaviours associated with social cohesion, such as volunteerism. Thus social cohesion is arguably more evident at the community level where the outcomes of cohesion can be seen, although the individual behaviours and attitudes may also be observed. Lastly, the macro *free home internet* component of the research goal relates to the external Computers in Homes intervention, and thus involves the objectives and agendas of Computers in Homes and government ministries as influenced by ideological and political contexts. Therefore, as the

research goal investigates all these levels, the research design recognises and operationalises them in a layered, mixed methodology. McLeod and colleagues argue that

The multilevel perspective by its nature calls for diversity in research methodology ... [or] methodological pluralism: varied combinations of methods, types of evidence, and analytical strategies. Also implied is the desirability of comparative frameworks across time and space. (McLeod, Pan, & Rucinski, 1995, p. 78)

In a slight variation on these approaches stressing the layered nature of social research, Yin (2003) explains that in case study research, the investigation design should be guided by levels of questions, progressing from the explicit questions asked of the research participants at the simplest level, through to the larger questions that the researcher is endeavouring to answer with the study itself - the researcher's own questions that "reflect the full set of concerns from the initial design" (ibid., p. 74). Level 1 questions are those asked of interviewees, while level 2 questions are those asked about the case, and are tacit rather than explicit: questions of inquiry that the researcher has in mind rather than expresses verbally to research participants. Yin's level 3 questions are posed across cases, such as comparing one case with another. Level 4 questions are asked of an entire study, and level 5 questions are directed at policy "beyond the narrow scope of the study" (ibid., p. 74). Thus Yin's framing of levels, or layers, of inquiry in case study methodology addresses the idea that social action is comprised of micro, meso and macro levels outlined in the previous paragraph, as well as the "multilevel perspective" of McLeod et al (1995) also cited previously, which requires "diversity in methodology" (p. 78). Yin (2003) makes a similar point: that the different levels of inquiry need different sources of evidence, and "this crosswalk between the questions of interest and the likely sources of evidence is extremely helpful" (ibid., p. 74). Moreover, "conclusions cannot be based entirely on interviews as a source of information" (ibid., p. 76) and the case study researcher must be ready to incorporate evidence from sources that may not have been planned for:

Case study data collection does follow a formal plan, but the specific information that may become relevant to a case study is not readily predictable. As you collect case study evidence, you must quickly review the evidence and continually ask yourself why events or facts appear as they do. Your judgments may lead to the immediate need to search for additional evidence. (Yin, 2003, p. 59)

Therefore in the present study, a range of methods was incorporated in the design to ensure that sufficient, appropriate information would be collected, relevant to the questions of inquiry underlying the research goal. In the table below, these questions of inquiry are shown

progressing from the micro level assessing specific individuals, through to the macro level where the results of the study are interrogated. Here the aim is to draw conclusions on implications of the study which may lead to policy recommendations:

Levels of inquiry (Yin, 2003, p. 74-75) in the research design	Levels of social action implied in the research goal <i>(to assess how internet access and social cohesion are related in a free home internet scheme)</i>	Methods relevant to each level of inquiry, applied at Time 1 and Time 2
Level 1 Questions asked of specific interviewees	Micro level of social action In what ways do individuals within households in each case interact with the internet and their social networks?	<ul style="list-style-type: none"> • In-depth interviews seeking attitudes and reflections on the internet experience • Survey items on internet connectedness • Survey items relating to evidence of social cohesion in behaviours such as contact with family, with neighbours • Observation of research participants at home.
Level 2 Questions asked of the individual case	Meso level of social action What conditions and outcomes associated with social cohesion and internet use are evident at group/case study level?	<ul style="list-style-type: none"> • Interviews and discussions with school leaders, Computers in Homes national coordinator • Observation of family meetings, events, training sessions • Review of level 1 / micro results in each case study, and analysis of results across cases.
Level 3 Questions asked of the pattern of findings across multiple cases		
Level 4 Questions asked of an entire study	Macro level of social action To what extent are the community internet aims of the external intervention (Computers in Homes) achieved in the selected case studies, as expressed in <ul style="list-style-type: none"> - Computers in Homes discourse, and - Governmental discourse? What policy implications emerge from these cases?	<ul style="list-style-type: none"> • Review of Computers in Homes materials (print, online) and various iterations of the government's Digital Strategy as it developed 2004 - 2008 • Observation at Computers in Homes meetings and events 2002 – 2005; also 2008 • Consultation at, and participation in, 2005 Ministry of Education, Ministry of Economic Development, 2020 Communications Trust research seminar • Discussion with Computers in Homes coordinator at a variety of events and meetings 2003 → 2008 • Ongoing review of the literature, including media reports.
Level 5 Normative questions about policy recommendations and conclusions, going beyond the narrow scope of the study		

Table 3-3: Multi-level mixed methodology and levels of inquiry

In planning a mixed methods study, I considered how the different methods would intersect, how they would complement each other, and the advantages of being in a position to allow the different sources of data from each method to inform one another. For example, hearing a Computers in Homes parent talk about her family's use of the internet in practice, and describe what it meant to her personally, could be set against the goals of Computers in Homes and those of the local school. In some cases I might find congruence, and in others, incongruence. I could obtain a principal's views about his or her ICT strategy for his or her school and the role intended for Computers in Homes within that, and set those views against what was actually happening among Computers in Homes families. Therefore a subtle interplay would be possible, with a range of data gathered over time informing the findings from other methods and collected at other levels.

In addition, because 'cases' defined which groups would be studied, data from each case study could reflect on the other. Therefore the conduct of this study over time required a patient, piece by piece, sequential but also retrospective and holistic manner of handling the research. By this I mean that different types of data might arrive within a short space of time, followed by a delay, then more sporadic data collection over time, and at each stage I was able to consider findings from different sources in light of the other, reflecting back to what had already been found, considering comparisons and contrasts over time or between cases, and so on.

Some would describe the interplay between data obtained using different methods, made possible by a deliberate methodological pluralism across different cases, as affording the advantages of triangulation. In a qualitative study, the use of this term can be viewed as problematic; yet methodological pluralism does offer a means by which data can be cross-checked in a number of ways, given that "it is better to look at something from several angles than to look at it in only one way" (Neuman, 2003, p. 138). This is especially the case in qualitative research, in which

Qualitative researchers are more concerned about issues of the richness, texture, and feeling of raw data because their inductive approach emphasizes developing insights and generalizations.
(Neuman, 2003, p. 137)

Robert Stake, in Denzin and Lincoln (2000) describes triangulation in case study research as "a process of using multiple perceptions to clarify meaning, verifying the repeatability of an observation or interpretation" (p. 443). Yin (2003) concurs, saying

The most important advantage presented by using multiple sources of evidence is the development of *converging lines of inquiry*, a process of triangulation ... Thus, any finding or conclusion in a case study is likely to be much more convincing and accurate if it is based on several different sources of information, following a corroboratory mode. (Yin, 2003, p. 98)

The term triangulation is thus found to be acceptable and appropriate in the context of case study research and it aptly describes the intention of the research design in the present study, in which multiple perspectives were sought as shown in Table 3-3. The goal in obtaining multiple perceptions in a qualitative study is to increase the authenticity of the research where the intention is not "to discover lawful properties of the external world ... or to extract and connect observed effects with causes" (Greene, in Denzin & Lincoln, p. 986). Rather, the researcher is concerned to recognise and understand the complexity of an issue bound up in a number of contexts such as those arising from a particular case (place, location) in a given social or economic or political setting, and to include all voices. As explained in section 3.1.3, I viewed the research through a qualitative lens because it was a priority to obtain the views of insiders involved in the research settings in order to adequately investigate the social cohesion focus of the research goal.

The variety of methods set out in Table 3-3 was planned with the potential for cross-checking of data in mind, and also whether the methods should be concurrent, simultaneous or sequential (Neuman, 2003, p. 139). I considered triangulation to be an advantage because I aimed, by the conclusion of my study, to be in a position to understand the overall contribution of Computers in Homes to social cohesion, which would need to be composed of many viewpoints. Of the several types of triangulation available - of measures, observers, theory and method (ibid., p. 138) - triangulation of method was utilised here. Triangulation of method occurs when

The researcher looks for converging interpretations in field notes, interviews, documents, artefacts, and/or other evidence, in relation to a common object of interest. Researchers can also use quantitative methods to triangulate with qualitative methods ... usually somewhat more credibility is invested in data from one of the methods, with data from other methods lending complementary support to the explanation. (Lindlof & Taylor, 2002, p. 241)

Both sequential and parallel triangulation methods which would complement one another and thus provide greater authenticity were planned. Sequential triangulation was achieved through the Time 1-Time 2 longitudinal design. Parallel triangulation was achieved within the face to face interview because it delivered complementary types of data: responses to survey items, personal narrative from interviewees, and researcher observation. Responses to open-

ended interview questions generate findings that are coherent in themselves, but which serve an additional useful function of providing context for the quantitative results. In a similar way to Zorn and colleagues (2006), this meant it was possible to “[combine] the questionnaire measurements with an analysis of the transcripts and field notes...to contextualize the findings of the questionnaire” (Zorn, et al., 2006, p. 128).

The advantages of the mixed methodology become apparent throughout chapter 4 as the results from different sources converge on themes and conclusions about internet use and social cohesion, discussed especially in the introductory section of chapter 5 (page 206 - 208), and argued to be a strength of the study in chapter 6 (section 6.2.1, page 257).

3.5 RESEARCH PROCEDURES

The two propositions comprising the research goal (as explained in the introduction to this chapter, pages 78 - 82) focus the investigation on two components: the use made of internet access, and manifestations of social cohesion. Data relevant to the goal of the study to assess how these elements are related in the context of Computers in Homes at specific city sites, are required on the extent to which the free home internet access is used, and the extent to which social cohesion is present in the case study settings, over time. In this section the research procedures relevant to, first, internet access and subsequent use by individuals, and second, social cohesion in Case A and Case B, are explained.

3.5.1 OPERATIONALISING THE RESEARCH GOAL: INTERNET USE

The inclusion of a quantitative method within a naturalistic inquiry is not necessarily inconsistent with its goal. The broad qualitative approach of the Computers in Homes study was designed, most of all, to obtain a variety of data from a range of sources over time that could be used to develop balance in interpretation and thus increase authenticity in the results and conclusions. Lincoln and Guba (in Denzin & Lincoln, 2000) recall their previous assertions on the subject and argue that qualitative research is not “anti-quantitative” (p. 174):

Responsive evaluation does not rule out quantitative modes, as is mistakenly believed by many, but deals with whatever information is responsive to the unresolved claim, concern, or issue. (Denzin & Lincoln, 2000, p. 174)

Lincoln et al also recall “there are many opportunities for the naturalistic investigator to utilise quantitative data – probably more than are appreciated” (Lincoln & Guba, 1985, in Denzin & Lincoln, 2000, p. 174). Use of a quantitative procedure was helpful in the current research not only in ascertaining behavioural and attitudinal components of social cohesion, as shown in Table 3-4 and summarised in the results set out in chapter 4, but also for measuring participants’ internet connectedness. If there is a relationship between internet access and social cohesion then the internet access must actually be used and therefore needs to be tracked in some way. If the internet access provided to households in a given case is not utilised, then social cohesion effects in that case may be unrelated. I needed to establish whether people actually used the internet, how essential it was to them, whether they continued to use it, and whether their use grew more or less. One of the two underlying propositions therefore included *free home internet access leads to ongoing internet use*; a proposition that may be assessed quantitatively even though self-reporting found in interview narratives could also be used. A second reason for incorporating a quantitative component in tracking internet use is that social connectedness is characterised by the New Zealand government in three ways, one of which is telecommunications access (Ministry of Social Development, 2006) which appears to assume that internet access translates into some sort of beneficial social outcome.

The internet connectedness section of the interview schedule was modelled on the Internet Connectedness Index (ICI) used in the Metamorphosis study referred to in chapter 2 (section 2.3, page 70 - 71). The ICI may be thought of as a multi-dimensional indication of people’s relationship with the internet: it is a “...qualitative conceptualization ... taking into consideration the breadth, depth, and the importance of individuals’ internet experience” (J.-Y. Jung, Kim, Lin, & Cheong, 2005, p. 64). Importantly, Jung et al (2001) intended in designing their ICI that it would transcend the limitations of “dichotomous and time-based measures”. The type of dichotomous study they refer to uses limited measures of time online and ownership of, or access to, a computer and internet. It did not make sense to me to assume that, given internet access, new users would incorporate the technology into their everyday lives “in the same manner and to the same degree” (ibid., p. 509) that could be measured by simple means. My methodology was designed to uncover the ways in which people responded to internet access in their own ways, both through their own words, and through devising a stable measure of their internet engagement that would complement the user voices. In this sense “a multilevel and contextual way of envisioning the relationship between individuals and technology” (J. Jung, et al., 2001, p. 513) was adopted for the study.

On the face of it, the ICI may appear to be one-dimensional and at odds with the arguments made above, because it is derived from numerical calculation. However section 3.5.2 following shows that, far from being merely an “hours of use” (ibid.) measure, the internet connectedness index is a composite or aggregate value of the extent to which the user is actively engaged with internet use. The Metamorphosis authors suggest it is desirable to view people’s computer technology ownership, access and time online within a context, a social ecology, and to consider qualitative dimensions so that research on internet use, or *connectedness*, their preferred term (J. Jung, et al., 2001, p 512) is more about people’s *relationship with the internet*. The term “connectedness” used in the Metamorphosis project is intended to imply a more complex role played by internet access in people’s everyday lives, including places it is accessed from, goals they have in using it, tasks undertaken, and so forth. Measuring this can take account not only of how much time is spent using the internet, but what they plan to do with it.

The Metamorphosis ICI, ranging from 1 (the lowest internet connectedness) to 12 (the highest internet connectedness), is made up of **eleven** items. These are: evaluation of the internet; how much would one miss the *computer* when absent; how much would one miss the *internet* when absent; time spent online; history of home computer use; time spent on online activities; scope of goals in internet use; scope of online activities; scope of places of internet use; scope of computer use; scope of email use. The version of the Metamorphosis ICI used for the current study was made up of **eight** items, omitting the items ‘scope of email use’ and ‘scope of PC use’, and combining two separate technology dependency questions into one. Reference to Appendix 3, question B3, will show this single question which, in the original Metamorphosis study, was two separate questions: “Imagine you woke up tomorrow to find that the computer had vanished”, and “Imagine you woke up tomorrow to find that the internet had vanished”. For the purposes of the current study, a focus on the internet specifically was appropriate because of the implicit proposition underlying the research goal that internet use would need to be tracked over time.

Data for this purpose were obtained by asking questions directly in the context of face-to-face interviews. Appendix 3 shows certain questions pertain to internet use, reflecting the eight areas stated above. A single figure was obtained by averaging the eight values, which, due to the variation in scales among the variables, were standardised to a 12-point scale. Thus the index is arguably much more than a measurement of time spent online. Its composite nature approaches a numerical equivalent of “patterns of use” (ibid.) of the internet user. More than

the concept of an internet repertoire (a person's range of internet capabilities), the internet connectedness index brings together a number of components of internet engagement.

The fact that the ICI in the present study compresses eight components into a single rating for each user does afford utility within the larger purposes of the study. The figure serves as one element in the package of data for each person, and each case study. Trends and comparisons (between participants, groups of participants, and cases, as well as individuals, groups and cases over time) are readily discerned, and while the index has limited transferability to contexts outside of these case studies, it has an important role to play in determining the adequacy or otherwise of Proposition 1, that free home internet access leads to ongoing internet use. Conclusions on this are, in turn, vital as part of the assessment of Proposition 2, internet access is positively related to evidence of social cohesion. The Metamorphosis researchers also point out that one important use for an internet connectedness index is that it can identify where "specific interventions are necessary for certain groups of people" (Ball-Rokeach, et al., n.d., p. 530).

3.5.2 OPERATIONALISING THE RESEARCH GOAL: SOCIAL COHESION

The literature review in Chapter 2 showed social cohesion has been characterised in a number of ways that Friedkin (2004) suggests exist on two levels: *individual behaviours*, and *group conditions and outcomes*. These were tabulated in that chapter in Figure 2-3 (page 66) to signal the ways in which a study such as the present research could be operationalised to assess a range of dimensions of social cohesion. I proceeded on this basis to expand these into a schedule showing levels, dimensions and characteristics of social cohesion in relation to appropriate methods of collecting data on each, summarised below in Table 3-4 (pages 115 – 117).

First, some observations are made about how the methods were determined. While some characteristics of cohesion stated in the literature may be thought of as abstract and subjective, such as "bonds between individuals who constitute a collectivity or group" (Vergunst, 2006, p. 1), they also lend themselves readily to a range of research procedures. For example, the group level "networks of mutual support" can be assessed in part by seeking anecdotal as well as quantitative data on people's trusted contacts; it can also be assessed to an extent through observation, and the views of others who know the group concerned. Many of the individual level behaviours can be assessed using both survey and anecdotal data, as implied in Table 3-3 (page 108), where "level 1" (Yin, 2003) of an inquiry that addresses the

individual level of social action may be measured by methods such as survey questions. It was possible to integrate a range of methods in the case study design so that I could observe, discuss, interview, deliver survey questions, participate in meetings and at times be a part of the comings and goings within study participants' homes. Additionally I could review textual material such as the Computers in Homes website and resources given to participating schools, and review copious government information on the Digital Strategy (Ministry of Economic Development, et al., 2004; New Zealand Government - Ministry of Communications and Information Technology, 2007, 2008). Evidence from all of these "highly complementary" sources (Yin, 2003, p. 85), became part of a gathering stream of field notes, recordings, transcripts, annotated interview response sheets, notes of meetings and review notes on individual participants that flowed together for each individual and case. As the material accumulated, themes became apparent that could be compared, contrasted and synthesised both within cases and between them. Multiple sources of evidence are a major strength of case studies (Yin, 2003), allowing "the development of converging lines of inquiry" (ibid., p. 98) so that conclusions are more robust, arguably a notable strength of the present study (refer page 226).

Table 3-4 below expands the social cohesion framework (Figure 2-3, page 66) introduced in the literature review (page 59 - 63) by setting out the methods used to gather data on each of eight characteristics:

<i>Level / dimension of social cohesion, with related characteristics</i>	<i>Methods selected for data collection and integration of results across types of data</i>		
INDIVIDUAL LEVEL BEHAVIOURS	Interview with Computers in Homes participants	Survey questions	Other methods: observation, discussions etc
1 SOCIAL CONNECTEDNESS Evidenced by: <ul style="list-style-type: none"> - unpaid work outside the home (Ministry of Social Development, 2006) - household access to telecommunications (Ministry of Social Development, 2006) <i>NB: all households in this study had internet access</i> 	<ul style="list-style-type: none"> - Interviews invite participants to talk about volunteer-type work such as helping at school - Use of internet access is evidenced in self-reporting in the interview; reasons for how they made use of it, what it meant to them 	<ul style="list-style-type: none"> - Survey questions include regularity of volunteer work such as charity collection, or work on a community project - Survey questions on internet use - assessment of internet use at Time 1 and Time 2, aiming to show outcomes of internet access over time 	<p>N/A</p> <p>N/A</p>

<p><i>provided by Computers in Homes</i></p> <ul style="list-style-type: none"> - frequency of interaction with family/whanau and friends (Ministry of Social Development, 2006) 	<ul style="list-style-type: none"> - Interviews invite participants to talk about their family and friendship networks, and internet use to this end 	<p>Survey questions e.g. Contact with family members: How often do you get together? How often do you speak on the phone? How often do you exchange e-mail? Has using the internet changed the amount of time you spend talking to friends and family on the telephone? Has using the internet changed the amount of time you spend visiting friends and family? Has using the internet changed your feeling of connectedness with friends and family?</p>	<p>Researcher observation in household settings</p>
<p>2 ROUTINE DAY-TO-DAY LIFE</p> <p>Getting by and getting on at the more mundane level of everyday life (Forrest & Kearns, 2001)</p>	<p>The interview with each participant at home was designed to capture day-to-day aspects of internet experiences as well as people's reflections on the neighbourhood, the community and their role within it. The interview schedule comprehensive enough (see Appendix 3) that interviewees could traverse a wide range of topics relating to internet at home and their unique 'everyday life', a somewhat invisible but important element of social cohesion (Forrest & Kearns, 2001)</p>	<p>Survey questions included those relating to neighbourhood relationships (Q4-6, Appendix C), visiting and phoning people (Q14-15), whether they had people to rely on.</p>	<p>Researcher observation of participants' daily lives during the cycles of interviews.</p>
<p>3 INCLUSION</p> <p>People feel a part of society; differences are respected (Statistics New Zealand, 2006); diversity is valued; attitudes are inclusive (Institute of Community Cohesion, 2009)</p>	<p>Interviews provide the opportunity for participants to talk of their sense of belonging in their neighbourhood and wider community, and their views about it</p>	<p>N/A</p>	<p>Researcher observation, such as at group meetings, provided a sense of the ties between people; their attitudes to one another</p>
<p>4 SUPPORT</p> <p>People feel safe and supported by others (Ministry of Social Development, 2006)</p>	<p>Interviews provide the opportunity for participants to talk of their support networks, from neighbours to friends and family</p>	<p>Survey questions e.g. about neighbourhood contacts – people known by name; how many neighbours participants would ask for</p>	<p>N/A</p>

		help in certain circumstances; ratings of trust and contentment.	
5 PLACE ATTACHMENT & IDENTITY Belonging, identity, and willingness to commit to shared tasks.	Interview questions that focus in the first section (Q1- 18) on people's attachment to their community provide opportunities for rich anecdotal material	Survey questions e.g. on length of time in neighbourhood, home ownership, intention to stay etc (indicates to some extent how strongly people associate with the community). Other questions: - How proud are you to tell others that you live in your neighbourhood? (<i>Scale 1 – 5</i>) - How often do you have discussions with other people about things happening in your neighbourhood?	Researcher observation of participants' engagement with other community members and projects
GROUP LEVEL CONDITIONS & OUTCOMES	Interview with Computers in Homes participants	Survey questions	Other methods: observation, discussions etc
6 NETWORKS OF MUTUAL SUPPORT Bonds that hold people together in a group	Interviews generate anecdotes about neighbourhood and family networks, feelings about the neighbourhood	Survey questions asking e.g. number of neighbours known; habits regarding visiting and phoning people	Researcher observation of events, meetings; discussion with stakeholders.
7 SOCIAL CAPITAL Interaction within the community; civic engagement and associational activity	Interviews to discover stories about what people do in their community	Survey questions generate data on e.g. ratings of trust and contentment; belonging to clubs, churches, involvement in community projects. See Appendix 3, section C, Q5-7	Meetings / discussion with key informants, observation of events over time - aim is to generate other perspectives eg school principals, Computers in Homes coordinator.
8 SOCIAL SOLIDARITY Dilemmas and problems can be easily solved by <i>collective action</i> (Friedkin, 2004); ability to mobilise toward a <i>collective goal</i> (D. V. Shah & Scheufele, 2006)	Time 2 interviews especially bring reflections from interviewees playing key roles	N/A	Discussions with e.g. school principals, Computers in Homes coordinator Observation of events, meetings.

Table 3-4: Methods selected to research social cohesion, by level and characteristic

The procedures set out above address the ‘micro’ to ‘meso’ levels of social action referred to in Table 3-3 (page 108). These levels involving direct data collection are roughly equivalent to levels 1 and 2 in Yin’s (2003) advice on a progression of inquiry in a case study investigation being arranged on five levels. As a reminder, level 1 involves questions of the research participants, and level 2, questions asked by the researcher of each case. Once data are gathered and assembled at these levels as shown above in Table 3-4, the analytic process can proceed to address Yin’s level 3 – interrogation of the data in chapter 4 to explore issues and themes across the cases in chapter 5, Discussion. Level 4 - synthesis and reflection on the implications of the entire study is pursued as a later phase of the process drawn together in chapter 5 and chapter 6, Conclusions, where level 5 – recommendations about how the study can inform policy – is also addressed. The schema presented above in Table 3-4 is therefore an important tool in the organisation of material on social cohesion that helps provide the logic of the study’s conclusions.

At this point in the thesis, the methods used to investigate social cohesion at individual and group level, as shown in Table 3-4 above, are explained. The principal vehicle for data gathering at these levels was the face-to-face interview with participants over two phases in the research. Observation and meetings with other key informants such as school and Computers in Homes staff also made a significant contribution to the results. A fuller description of the in-depth interview is set out below in section 3.5.3. The interviews gathered people’s feelings about their neighbours, their community, other families, the school, their community activities; as well as their reported sense of positive, supportive neighbourhood relationships, respect for people’s differences, building alliances to achieve common goals, volunteerism, and participation in sports clubs, churches and other organised community activities. Survey questions were incorporated into the interview design so that quantitative data on length of time in the neighbourhood, intention to move away, number of neighbours known by name, and other aspects relating to a sense of community belonging and support, social capital and civic engagement, as shown in sections A and C of the interview schedule (pages 267 – 268) were also gathered.

3.5.3 INTERVIEW DESIGN

Early in the chapter I stated an overall intention to interact with individuals in a one-to-one setting as the primary mode of data collection. I found support for this approach in the literature for example in the view that “individuals comprise communities, and their attitudes and behaviours in relation to each other ultimately shape the quality of civic life” (D. Shah, et

al., 2001, p. 142), while in social network research “smaller egocentric (or personal) networks – defined from the standpoint of focal individuals” (Wellman, 1988, cited in Wellman & Berkowitz, 1988, p. 27) are said to create a natural starting point for examining social processes. Friedkin (2004) was particularly helpful in conceptualising my study for his integration of the individual level and group level dimensions of social cohesion, because while my intention was to gather data about individual level experiences, my goal in the research looked to assess group level processes. Friedkin’s suggestion that groups are cohesive “when group-level conditions are producing positive membership attitudes and behaviours, and when group members’ interpersonal interactions are operating to maintain these group level conditions” (p. 410) was therefore a framework that enabled me to anchor data obtained from individuals to a larger process. I considered data on individual attitudes, behaviours, and interpersonal interactions relating to group attraction and attachment would be best gathered by designing an interview schedule including questions directly relevant to community belonging as it is characterised in *individual* behaviours, shown as dimensions 1 – 5 in Table 3-4 (pages 115 – 117).

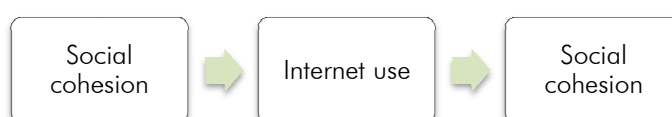
A number of studies were consulted that had similar objectives to the current research, so that if specific interview questions had already been successfully framed and used it might be possible to adapt them to the purposes of this study. For instance, in reviewing “Tracking online life: How women use the internet to cultivate relationships with family and friends” (Rainie, et al., 2000), I noted the way questions were framed, assessing which could be adapted for my study. A question on the social connectedness of internet users and non-users (ibid., p. 21) categorised participants according to whether they felt they had many people to turn to when they need help; whether they visited someone yesterday; whether they called someone just to talk yesterday. These questions had produced interesting findings relating internet use to sociability:

Internet users are also more active socially than nonusers, and users do not report any measurable falloff in their ties to their family and friends because of their involvement with the Internet. Nearly three quarters of Internet users (72%) say they visited family or friends “yesterday,” while 61% of nonusers report they had visited someone. About 61% of Internet users phoned a relative or friend just to talk “yesterday,” and 58% of nonusers said that. (Rainie, et al., 2000, p. 21)

It seemed to me that such data could be relevant to social connectedness (see dimension 1 in Table 3-4) in these case studies. Thus the questions cited above from Rainie and colleagues (2000) were adopted for the interview schedule in the present study and appear as questions A13, A14 and A15 in the interview schedule.

Another example is the influence of studies by Norman Nie of Stanford University, who published quantitative research investigating the internet and sociability, specifically the displacement theory of internet use (Nie & Hillygus, 2002; Nie, et al., 2002) showing strong evidence at that time that “the more time spent on the internet at home the less time spent with friends, family and on social activities ... Similarly, internet use during the weekends is more strongly related to decreased time interacting and socializing than internet use during weekdays” (Nie & Hillygus, 2002, p. 11). While Nie’s time diary research was very much in the positivistic mould, it seemed likely that data of this type could inform the broader intention of the methodology explained in the introduction to this chapter, that the mix of quantitative and qualitative methods could produce a rich sense of “what was going on” for those involved in the free home internet experience. Therefore questions C1, C2 and C3 were included in the interview schedule as a basis for assessment of the extent to which participants’ time on other activities was displaced by internet use.

In this way I gathered together possible interview questions as models for reference, then summarised, reviewed and adapted them in an iterative process of refining questions in relation to the range of data I believed I needed in order to investigate the study goal as fully as possible. The questionnaire was structured into three sections corresponding to key areas of interest for the investigation: first, section A, ‘community belonging’, especially as it existed already in each case study and aimed at producing data on the group level of social cohesion. Section B, ‘internet connectedness’, a term borrowed from the Metamorphosis studies (Ball-Rokeach & Gutierrez Hoyt, 2001) and designed to explore the intensity of people’s relationship with the internet, was the second section; and third was Section C, ‘social capital’ which was intended to address people’s community-oriented activities and involvement – their civic engagement. The intention of this three-pronged approach was to reflect the possible relationship between the internet and society as set out in chapter 1, that internet use occurs in a social setting which may affect the way in which the internet is used, and then in turn it may have an influence on the setting:



A range of hypothetical possibilities exists here, and the interview was designed to produce data that could make these apparent. Internet use at home among parents in a school community group with weak social cohesion, for example, could conceivably help to build social ties; or in a group with strong social cohesion, successful internet use may more readily be achieved, or it could conceivably erode associational activities that contribute to social cohesion.

A combination of closed questions and open-ended sets of questions that could be used in a semi-structured way was included in the questionnaire. When I conducted each interview I ensured that I was precise about using the exact wording of the closed questions, while at times I would be more flexible in the way I treated the open questions, or followed an initial question with probing if responses seemed limited. Participants could have answered many of the interview items by using a written questionnaire, especially where a simple numerical answer or rating was all that was required. However, a written survey would have reduced the response rate considerably, because of the length of the questionnaire. Respondents needed to be guided through it, and without such prompting I believed many respondents would not complete the exercise. More importantly, I aimed to use the interview schedule as a springboard for less structured discussion which is only possible in a face to face setting.

Several pilot interviews were conducted with volunteers during September 2003, to check interview length, the schedule of questions and its format. No alterations were made subsequently. In practice the interviews were lengthy (most often requiring about one to 1½ hours to complete) producing copious data from survey questions as well as transcribed verbal responses. In most cases I recorded my thoughts on a Dictaphone during a 45 minute drive home, which I would also transcribe. Initial interviews generally took place four to six weeks after the family had received a computer and internet connection, but sometimes up to 12 weeks later because as sole researcher in full time employment, I was often able to complete only one interview each week.

3.5.4 MEETINGS AND OBSERVATIONAL RESEARCH

Throughout the study I took opportunities as they arose to meet with decision-makers or others who were in some way actively supporting, promoting or administering the Computers in Homes projects, for wide-ranging discussions. At intervals from June 2002, when the research was in its development phase, through to June 2005, in casual and sometimes more formal settings I met with the following range of groups and individuals:

Person or group	Including...
Five school principals	Two co-Principals of Case A Principal of Case B Principal of Case C (until 2002) Principal of Case C (from 2002)
Housing New Zealand Corporation (HNZC) staff in the Case A neighbourhood	Community Renewal Manager Community Development Manager HNZC Project Administrator Case A neighbourhood "Residents Group" secretary
And	
The Board of Trustees of one school, comprised of about seven members	
The national coordinator of Computers in Homes (until 2002)	
A new national coordinator of Computers in Homes (from 2002)	
Another university researcher closely involved in Computers in Homes implementation.	

Table 3-5: Research meetings

Generally these were not formally conducted interviews, but rather they were conversations and meetings recorded as field notes. At these meetings, to a certain extent "observational research" (Patton, 2002, p. 265) was taking place because I was presented with new perspectives on the case study settings. At the earlier stages of becoming acquainted with the research communities, negotiating the terms of the research, and meeting with groups of participants, I was an onlooker with little or no involvement. As the fieldwork and interviewing progressed, I became gradually something of an honorary member of the Computers in Homes network, a familiar figure: people came to expect me there. Parents and others appeared to be comfortable with me around and sought my opinions from time to time. By the end of the study in June 2005 at a Case A parents' meeting, I was welcomed warmly by parents who asked when would I be back for more interviews, and comment was made by a senior staff member that I had "been the one constant" through the Computers in Homes process over the preceding two years. From a staff perspective (Computers in Homes coordinator, school principals) I was treated as something of an equal and included in meetings and other functions on that basis. In this way I could develop the perspective of an "insider"; while as a parent of school-aged children myself, I was probably seen by research participants as both someone to relate to on an equal basis, someone trustworthy, while also being an "outsider" with special knowledge. Further implications of this complex combination

of roles is commented on further in a section on reflexivity (3.9.2, page 130) at the end of this chapter.

3.6 TIMELINE OF THE RESEARCH

The entire project unfolded as shown in Table 3-6 below. Planning, negotiation, research design and ethics approval all proceeded as part of more or less a single, seamless process ahead of actual data gathering which commenced when all else was in place, in November 2003.

Date	Item
April 2002	Flaxroots Technology Conference. Research required on Computers in Homes. Contacted Victoria University (VU) researcher for Computers in Homes.
June 2002	Met VU researcher and Computers in Homes national coordinator. Both encouraged the research. Attended Computers in Homes parents' meeting at school C, with school principal and Computers in Homes staff.
Nov 2002	Completed research proposal; sent to supervisor
April 2003	Attended another parents' meeting at school C; new principal
May 2003	Met principal at School C
July 2003	Attended meetings at Case A, Case B and school C, with new Computers in Homes coordinator Sought ethics approval from Massey University; provisionally granted November
Sept 2003	Computers in Homes launched at Case A and Case B
Oct/Nov 2003	Commenced Time 1 interviewing at Case A and Case B
March 2004	Attended meetings with principals and parents, with Computers in Homes coordinator and VU researcher, at all three schools
April 2004	Time 1 data collection completed
Oct 2004	Commenced Time 2 interviewing at Case A and Case B
Feb 2005	Time 2 data collection completed
June 2005	Attended "Rejuvenation" of Computers in Homes scheme at Case A; invited to Ministry of Education/Ministry of Economic Development.2020 Communications Trust seminar at VU to present findings. Concluded data collection.

Table 3-6: Timeline of events in the research

A matter of timing should be discussed in reflecting on the use of mixed methods, multiple cases, the long lead-in time, and the length of time given to the two phases of interviews. I judged it important that my first interactions with participants should occur within a few weeks of the family receiving their Computers in Homes computer and internet access. I reasoned that the family should have had the opportunity to settle in with the internet and begin to use it, based on the Computers in Homes training, so that I could think of them as having a little internet experience rather than none at all. There would be no point, for example, arriving to interview people about their internet use at home if they hadn't yet managed to do so. After a few weeks the parents would also have had the opportunity to reflect on how they intended to use the internet. For these reasons, in most cases, the first interviews were conducted at least four to six weeks after the computer and internet had been set up at home, and the phases of interviews were long because of the time I had available to devote to them.

Finally, only two phases of research were completed, because sample attrition made it unlikely that longer term contact could be maintained with sufficient participants. If planning a similar study in the future, a longer period would be desirable if resources permit. Gaved and Anderson argue for a significantly extended approach to the conduct of community internet research, with "longer-term (> 4-5 years) multi-method studies of ... social impact" (2006, p. 29) in government funded initiatives, in the belief that it is only over that length of time that full understanding of community impact can be reached.

3.7 DATA ANALYSIS

Processing the array of evidence gathered as outlined in the previous section on research procedures began with careful data management. Transcripts were completed for each taped interview; interview forms with additional handwritten notes were filed for each participant; field notes were filed separately. An Excel database was set up to record responses on all survey questions.

The analytic process in my study, described by Robert Yin (2003) as maintaining "a chain of evidence" (p. 105) began with studying the first transcripts for their contribution to the key constructs of social cohesion and internet use, examining the Excel data in table form, and as work proceeded from Time 1 to Time 2, beginning to compare and contrast individuals, groups, cases and all of these again over the second data collection period, with continual

reflection on the two propositions underlying the research goal. In this section I explain the procedures used to analyse the quantitative data and then the qualitative data.

3.7.1 QUANTITATIVE ANALYSIS

- **DATA ENTRY**

An Excel spreadsheet was needed for quantitative data management, as survey data were collected in face to face interviews at Time 1 and Time 2 in this study. As each interview was completed, data were entered into three separate worksheets relating to Section A (sense of belonging), B (internet use) and C (community-oriented activities and involvement - civic engagement) of the interview. Participants were each assigned a code number, and Excel columns labelled with each survey item. A 'master' spreadsheet was retained, so that should an analytic procedure be relevant, columns of data could be copied to new sheets.

For the Internet Connectedness Index (refer section 3.5.1) the columns of values for each of the eight ICI elements (evaluation of the internet; how much would one miss the internet when absent; time spent online; history of home computer use; time spent on online activities; scope of goals in internet use; scope of online activities; scope of places of internet use) in the master spreadsheet were copied to a new spreadsheet. Calculation formulae were set up so Excel standardised all items to a factor of 12, and then averaged the total for each individual, generating a decimalised index between 0 and 12. Results are shown in Table 4.1 (page 142). The procedure was repeated after Time 2 with the remaining nine participants. Results are shown in Table 4.2 (page 152).

3.7.2 THEMATIC ANALYSIS

Grounded theory, developed by Anselm Strauss and Barney Glaser in the 1960s as a branch of qualitative research aiming to generate theory in the sociology of health care, has some applicability to the process used to analyse the material in the present study. Patton (2002) explains that grounded theory uses a "constant comparative method, comparing research sites, doing theoretical sampling, and testing emergent concepts with additional fieldwork" (ibid., p. 125), an apt description of the analytic procedure followed in this study. Data were continually placed in the context of a gathering stream of findings - from the other case study, from other methods, other family contexts, and earlier periods - and in this way illuminated the propositions underlying the research goal, and hypotheses gradually began to form.

Grounded theory makes use of a close interaction between the researcher and the real world “so that the results and findings are grounded in the empirical world” (Strauss & Corbin, 1998, p. 101), and at the same time it emphasises objectivity and rigour in procedures. It requires researchers to be “systematic and creative simultaneously” (Patton, 2002, p. 127) with a balance between objectivity and sensitivity required during analysis:

Objectivity enables the researcher to have confidence that his or her findings are a reasonable, impartial representation of a problem under investigation, whereas sensitivity enables creativity and the discovery of new theory from data. (ibid., p. 128)

This approach requires categorisation of data once description has taken place, so that the researcher identifies properties or characteristics among the data that will be noted, compared and carefully considered for relationships and patterns. For example, in the current study processing of interview transcripts involved multiple re-readings and reflection on similarities and differences between participants, and on detail and threads of information that gradually began to cohere as themes relevant to the research goal. One such theme is the role of opinion leaders at Case A, which formed on the basis of my growing awareness over repeated cycles of transcript analysis that certain interviewees were similar in some respects: in sociability, outspokenness, esteem from others, willingness to volunteer and take leadership roles, and public individuation. This theme took on greater importance in the context of other social cohesion data on social solidarity at Case A (see section 4.2.2, pages 195 - 196), and began to point towards one of the key outcomes of the research.

Another example of the iterative analytic process described in paragraph 1 of this section above is the data collected on the length of time people had lived in the neighbourhood that showed participants across both cases tended to be recent arrivals in their area, yet there was a sense of pride in belonging to that locality and a strong sense of neighbourliness (J. Williams, Sligo, & Wallace, 2004a). More detail on this perhaps surprising evidence of social cohesion at Time 1, despite domestic transience, is found in section 4.2.2 (page 185 - 186). Despite their unexpectedness these findings are considered in relation to other results on dimensions of social cohesion and internet use, again leading to one of the key outcomes of the study.

3.7.3 CODING

“Open coding” is an example of ways the inductive analysis above may be achieved through thorough, repeated analysis of the data using a classification or coding scheme. This is essentially a content analysis of all the interview transcripts and associated notes, together with raw and processed field notes. As soon as data collection commenced, it became necessary to design a means of organising and coding the data because although the study involved just two cases and around 30 participants, the volume of data was copious.

- CODING OF INTERVIEW TRANSCRIPTS AND FIELD NOTES

The objective in processing the interview transcripts and field notes was to achieve a system in which the material would not overwhelm but could be read and systematically studied in an early phase of analysis. Open coding, “the analytic process through which concepts are identified and their properties and dimensions ... discovered in data” (Strauss & Corbin, 1998, p. 101) involved the processing of transcripts and notes to identify material relating to the propositions underlying the research goal. As shown in chapter 2, Figure 2-3 (page 66), and especially in Table 3-4 in this chapter (pages 115 – 117), social cohesion has been defined and operationalised for this study as comprising eight dimensions such as place attachment and identity. Initial reading involved identifying particular phrases and whole statements that related to these dimensions. Multiple re-readings helped in summarising perspectives, noting contrasts and consolidating themes. It became possible from an early stage in transcribing and studying interview transcripts to identify, compare, contrast and distil particular observations that, over time, developed into themes in the process of “interplay between researcher and data” (Strauss & Corbin, 1998, p. 13). This definition highlights the inductive aspect of moving from the data to reflection, to further investigation, identification and movement towards conclusions.

3.8 STRENGTHS OF THE METHODOLOGY

Features of this study that give it authenticity include the extensive planning and liaison leading up to the two waves of data collection; and the mixed methodology. I consider the latter to be the principal methodological strength. The research goal required a study design that would achieve maximum richness through multiple perspectives on the internet / social cohesion

issue. Cross-checking among these perspectives has arguably increased the balance and credibility of the results, because “if data from two or more methods seem to converge on a common explanation, the biases of the individual methods are thought to ‘cancel out’ and validation of the claim is enhanced” (Lindlof & Taylor, 2002, p. 240).

Secondly, the use of two case studies was a strong feature of its design. The implementation process of the Computers in Homes scheme was essentially the same at both research sites, and the demographic features of the families involved were comparable, while the context in each case was very different. The dimensions that differed most markedly were the multiple agendas present at Case A (Housing New Zealand, Computers in Homes and a school restructuring into two entities), and, arguably, the dynamics of each group of families with, separately, the different leadership styles of the school principals. As the results chapter will show, and later discussion and conclusions, the outcomes for internet use and social cohesion in each case were quite different, so the case study design permits ready comparison and reflection on the contrast.

In this study, the principal data collection vehicle was the interview, from which came quantitative data for the ICI indices, qualitative data collected in interview transcripts, and interviewer field notes. Therefore the face-to-face interview setting in which the different methods intersected arguably provided a unifying context that makes triangulation, or cross-walk of data types, more meaningful. Observation and meetings gave a perspective to interviews; interviews formed a platform for survey data analysis. Altogether the methods became a means of reinforcing and cross checking interpretations of data and the direction of conclusions.

3.9 LIMITATIONS OF THE METHODOLOGY

Considerations that should be taken into account in reviewing the results of the study to be presented in chapter 4 largely concern the nature of the sample and how it was determined, and the potential for reflexivity in the researcher’s role.

3.9.1 THE SAMPLE

- **SAMPLING METHOD**

The sample was initially drawn from lists of Computers in Homes family names and contact details provided to me by the schools. From a number of attempts to contact adult family members at different times of the day, I established contact with a group of people willing to hear more information and make a decision about whether to participate in interviews. This study was not intended to be representative or generalisable; it could not be so, given that the small sample was opportunistic. As explained in section 3.3 (page 100) this meant that in most significant respects, sampling was out of my hands and in the control of Computers in Homes and the schools. This fact determined the nature of the sample. There was therefore limited potential for me to manage the sampling process, for example through selecting typical or critical cases. Also, biases (perhaps through schools' subjective reasons for selecting some families and not others) and anomalies over who was involved in the project resulting from schools' decision making processes could have been present in the sample before the research proceeded. For example, one participant and her husband in particular stood out from the others in regard to their evident level of education, strong motivation, sense of purpose, and - although one can only guess - their ability to make economic progress as a family, as they had been setting up a business before joining Computers in Homes.

- **COMPLETENESS OF DATA**

Data were missing for some participants for a variety of reasons, including missed appointments (the interviewee was not home at the appointed time), transient use of mobile phones (resulting in unreliable contact details), and unreliability of landline phones (no response to answer phone messages, no reply, named person not known or not available). Problems with internet connection for some families meant that they were unable to answer questions about use of the internet. Missing data subsequently affected analysis of results and for this reason some individuals were not included in analysis of the findings on particular items. Some participants moved away from the area after Time 1, or became unavailable for other reasons. Thus the sample was reduced to nine participants at Time 2.

- CONTROL GROUP

In order to compare the findings from both cases studies of families given free home internet, it would have been useful to consider a control group of families not involved in Computers in Homes so that evidence of social cohesion could more clearly be attributed to the community internet scheme, or alternatively be attributable to other factors. In the Toronto Netville ethnography, for example, around half of the sample surveyed did not have broadband internet at home while the other half did, so that differences could be seen in the number of neighbours each group regularly interacted with (Wellman, 2001b) and so forth. Consideration of this in the research design would have strengthened data analysis and conclusions drawn.

3.9.2 REFLEXIVITY

Validity in qualitative research is a contested matter, with some methodologists “warning against using triangulation uncritically” (Lindlof & Taylor, 2002, p. 241) because all research is affected by the circumstances in which it is conducted, and comparing data acquired using different methods is epistemologically problematic. Additionally, the Computers in Homes research consent process involves parent participants signing their agreement to research as part of joining the scheme, a feature which may be open to critique. However as explained earlier in the chapter (section 3.1.2, pages 87 - 90) I took care on a range of occasions to clarify to the Computers in Homes parents that the invitation to be interviewed for the present study was not compulsory, and through the usual research ethics process of informed consent (see Appendices 1 and 2) it was made clear that their involvement was voluntary. Yet I acknowledge three aspects of the fact that any social research is a form of intervention in the setting imposed by the researcher’s agenda: consent, bias and authenticity.

- CONSENT AND BIAS

In regard to participant consent, even a notional sense of compulsion to participate in research may have had an effect on the responsiveness of participants, an aspect already discussed in some detail in section 3.1.2 (pages 87 – 90). For example, it could be possible for a participant to feel somewhat grudging or even resistant about responding to questions. On the other hand, a participant might cheerfully participate in order to comply with the agreement they had signed, without really engaging in the process. Or, the respondent could exhibit social desirability bias, giving responses that he or she thought the researcher wanted

to hear. However the over-riding impression I gained throughout the interactions and relationship building with families was that they were very happy to be able to share their experiences with an interested researcher. After all, they had returned my telephone calls, or responded favourably to my approach by inviting me to meet them at home. A heightened sense of expectancy and importance may have become attached, in some participants' minds, to the idea that they were to be research subjects: a process called reactivity. My impression was that this enthusiasm to contribute came from a sincere wish to be involved in a constructive initiative.

- AUTHENTICITY

As discussed earlier in the chapter (section 3.1.3, pages 92 - 94) any research in a social setting is an intervention, and the researcher must manage a complex role as objectively as possible. Interactions I planned and carried out with insiders (parents in the Computers in Homes communities) and outsiders (Computers in Homes, principals, Housing New Zealand) together with the balancing act required between academic objectivity and involvement in the setting (see 'emic' and 'etic', page 92) altogether present a challenge to the ideal of a full and fair depiction of all claims, concerns and voices in the research settings.

This is a complex combination of roles. No matter how well the researcher manages this process, any sense that one has truly shared an insider perspective is, perhaps, a "delusion" (Patton, 2002, p. 266). The best one can hope for is to make the best use possible of

...Multiple and overlapping data collection strategies: being fully engaged in experiencing the setting (participation) while at the same time observing and talking with other participants about whatever is happening. (Patton, 2002, p. 265)

I can make no claim for fully representing the perspectives of all parents involved in Computers in Homes at the case study sites, or being able to entirely stand in their shoes given that I was an academic outsider with a different background; yet I was equipped with relevant experience, knowledge and capabilities to conduct a trustworthy, credible study (see the introduction to chapter 3, pages 78 – 79). While the results do not purport to be a fully inclusive representation or evaluation of the Computers in Homes new user experience and did not set out to be, the inquiry that took place within that context into a broader research goal relating internet access to social cohesion recorded the experiences of those who stepped forward with a commitment to valuing their voices and integrity in the research process.

CONCLUSION

The research design in this study has a number of implications for the presentation of results in Chapter 4. First, two propositions implicit in the research goal (pages 80 - 82) led to decisions over appropriate methods for assessing both internet use and social cohesion among the study participants. Both qualitative and quantitative methods were used to track evidence of these constructs over time. A case study approach was used, with a focus on two groups of primary school parents involved in Computers in Homes at Case A and Case B.

Thus in Chapter 4, the reader will find the research goal is addressed by the assembly of findings at *Case A and Case B*, over two principal times (*Time 1 and Time 2*), relating to two *propositions* concerning internet use and social cohesion, and arising from *both qualitative and quantitative* methods. In this way it will become possible by the end of Chapter 4 for the reader to discern some strong themes that will be explored in chapter 5, Discussion.

CHAPTER 4: RESULTS

INTRODUCTION

The chronological structure of this study was shown (page 77) as consisting of a series of phases over three years from mid 2002 to mid 2005. The more important structural logic of this thesis however is determined by epistemological assumptions influencing a qualitative approach to the research design, which highlighted social constructivism as a suitable paradigm for an investigation of two propositions comprising the research goal for the study. The first proposition arising out of a review of the literature in chapter 2 is that free home internet access leads to ongoing **internet use**. The second proposition, gleaned from assumptions especially in social policy is that internet access is positively related to evidence of **social cohesion**. The logic of the research goal with its two inherent propositions therefore shapes this chapter.

Thus the methodology had to address internet use and social cohesion in the selected research settings, which I argued in chapter 3 is best achieved through longitudinal case studies using a mix of qualitative and quantitative procedures. Case A and Case B¹³ in South Auckland were chosen for the study and consisted of groups of parents in households which opted into the Computers in Homes free home internet scheme. Two principal data collection phases focused particularly on extended interviews with adult participants in Computers in Homes, first from November 2003 to April 2004 (Time 1) and again in October 2004 to the early months of 2005 (Time 2). These waves of interviews generated both qualitative and quantitative data. In addition, interactions with key informants such as the Computers in Homes national coordinator, school principals, trustees and staff, and school families began earlier (mid-2002) and ended later (mid-2005) than the two main periods of data collection, generating additional field notes. Thus the period of primary research encompassed almost three years in total.

In a 2002 conference presentation by the chair of the 2020 Communications Trust (Thomson, 2002) which funds Computers in Homes, the comment was made that more research was required on Computers in Homes (see section 3.1.1, page 85). This remark led to discussion

¹³ Where participants are referred to, their code number is preceded by either A or B to indicate which group they came from, for example Participant B15 is from Case B.

of research possibilities within the Computers in Homes organisation, and the development of a mutually acceptable research concept. Access to research sites and people was negotiated, and subsequently I was able to begin a more formal process of meeting with key informants and those directly involved in the Computers in Homes free internet experience who might be in a position to volunteer for my study on internet access and social cohesion, and thus the study began.

Because my goal was to assess the relationship between internet access and social cohesion over a period of time, first I present findings on the outcomes of internet access, and the extent to which this access became – or did not become - ongoing use among participants in the two cases. This aspect of the results provides a foundation showing how ‘connected’ the participating individuals became in terms of internet use, before bringing in findings relating to the individual and group levels of social cohesion.

By the end of the chapter where the results overall are synthesised (see especially Table 4-3, page 203) it will be apparent that one case study of the two was the site of more obvious evidence of social cohesion, and more lasting engagement with the internet. Implications of this and other key findings will be discussed in chapter 5.

4.1 INTERNET ACCESS AND USE

Assumptions about providing internet access for those who do not have it in the expectation that this will lead to a range of improvements in quality of life (Onyx & Bullen, 2000) and participation in society remain prevalent in government policy such as the Digital Strategy 2.0 (New Zealand Government - Ministry of Communications and Information Technology, 2008). The goal of the present Computers in Homes study was to assess how internet access and social cohesion are related in selected free home internet case studies, with a view to concluding how confident we can be in the connection, and if so, in what way the relationship works. This section of both qualitative and quantitative evidence relating to internet use among the Computers in Homes participants includes features of use at Time 1 over the whole group, patterns of use among the participants based on a quantitative assessment, features of use at Time 2 including trends and barriers, and overall conclusions on internet access and use in the case studies compared.

To begin, features of participants' internet use in the initial period of the study are now reported, including their own stories about their internet experience, quantitative measures of internet connectedness over time, and barriers to internet use among the group as a whole. Thus both qualitative and quantitative data flow together.

4.1.1 TIME 1

Findings from interviews with the study participants on internet use over both cases at Time 1 (late 2003 – early 2004) show that on the whole, people were enthusiastic about basic internet applications. As is hoped by Computers in Homes, when the computer and internet arrived in the household, more family members began to be interested, such as in the home of **Participant A25**, who welcomed use of the internet by others: "the computer's always in use... they're pretty good and everybody gets a turn", and **Participant A3's** husband, **Participant A27**, who remarked later that this interest was stirred "practically as soon as it arrived in the house - I wanted to play." An unemployed solo father, **Participant B20**, was evidently very positive about the sense of promise represented by the Computers in Homes free internet:

Just the information that you can actually go and get...I mean I don't go on it that much my daughter's probably on it more than me but um yeah just to be able to go there, push a couple of buttons and get what you want, yeah...

In **Participant A3's** household, major changes were triggered at Time 1 (October 2003) when the computer and internet arrived in the home, for all members of the family, which included **Participant A3**, her husband, and their 7 year old and 4 year old children. The parents made use of spreadsheet and word processing applications as well as the internet to prepare a business plan and e-mail it to a business adviser. As will be shown later in the chapter, they successfully established their own business by the time I returned for their second interview.

Yet for others, while they were aware of the value represented by internet access, it was something they were anxious about also, such as **Participant B16**:

I don't mind if they get on the computer and look on the internet for things that are um, you know educational or to do with schooling, but if he jumps on it and wants to play the games on there which – he showed my young boy how to get into the games on the – computer, and it's sorta that's all my son my boy does now is just go straight to the games and play games for an hour and then he's got to get off

Here the point about the internet being an equivocal technology in the diffusion of innovations context (Vishwanath, 2006b) is pertinent. Worried individuals such as **B16** will need, and seek guidance on effective use of the internet from leader figures, if they are available. I return to this point in chapter 5 (section 5.1.3, page 231).

Large US studies have shown e-mail has been the most-used internet application (Horrigan & Rainie, 2002a; Nie & Erbring, 2000) and this popularity has continued to prevail, although the use of search engines was beginning to rival e-mail use in the popularity stakes by 2005 (Rainie, 2005) with e-mail still being the most popular. People's use of e-mail arguably offers a narrow assessment of success in connecting people to the world at large ("Computers in Homes ", 2007, Research section – Report #1, 2000) and is one of the primary goals expressed by school principals in these settings (refer section 4.2.2); thus Computers in Homes principals would welcome data showing e-mail was popular among the participants at Time 1 (2003 – 2004), based on responses to question B8 in the interview (see page 268). The Pew Internet Life finding in the US that e-mail was the most-used internet application (Nie & Erbring, 2000) was borne out in Time 1 data on people's "internet repertoire" (Anderson, 2008, p. 21), with fourteen of the group of 22 who answered on this question reported using e-mail weekly or daily. Half of these keen e-mail users were at Case A and half at Case B. Moreover, participants reported excitement in their discovery of the advantages of e-mail. For example **Participant A8** remarked that her sense of connectedness to friends and family had increased:

Just because my brother ... being able to e-mail him, where it's kinda we are a lot closer, I mean we are closer, we just chat a lot more and kinda have time to actually get to have a good chat, when we catch up and we e-mail each other on a regular basis which is we spend more time e-mailing each other rather than calling each other and yeah, I mean visit him say once a month, but it's I chat to him on a regular basis now....but in that respect it has increased...

Around half of those using e-mail, ten of 22, did so most often to communicate with friends and family (twice as many at Case A than at Case B) more than any other reason such as work-related. One third said they had set up a group e-mailing list, suggesting they were learning to, or were motivated to, use it more efficiently. It was clear that e-mail was a medium that people did enjoy. Typical remarks included **Participant A1** who said she looked forward to reading her e-mails because "it's exciting ...and it's a surprise because x sends me all these presents and goodies and funny things, some things I didn't even think they could put on there, how do they do that?" She estimated she spent three hours a week on e-mail, mainly with family, and that - "not the same week we got the computer, maybe a week after..." - she

had started e-mailing a member of her family with whom she had not had regular contact before having the internet at home.

Two days prior to her first interview in November 2003, very soon after receiving her computer, **Participant A3** had “just started e-mailing my aunt in Australia, my Mum was here when we did it, so it was quite an event”, and talked later of her “eagerness” in waiting on e-mail replies. In her second interview **A3** remarked she liked the fact that “I can type a letter and send it, rather than wait a week for it to be received.” On the other hand a type of ‘dark side’ of e-mail seemed to be present in **A25’s** comments. Asked if she looked forward to receiving e-mails she said “Not really! [laughs] Not really because I don’t know... they keep sending me back all these e-mails and ... all these crappy letters.” This respondent had a complex relationship with the internet which on the whole represented an escape from the real world rather than a networking tool for her ‘real’ life (refer to her story in section 4.2.1, pages 167 – 168; and her transcript on pages 276 - 281). However later, at Time 2, she did say she spent between five and ten hours a week on e-mail and by then appeared to look forward to it.

In responses to question B4 where interviewees were asked to rate a number of *goals* in using the internet, social goals appeared to be a priority for the majority of the study’s participants at this time. A little under half (ten of 24) were attracted to the idea that the internet was a place where ‘expressing yourself or your opinion’ could be achieved, saying this was ‘important’ or ‘very important’ to them. Around the same number said they felt it was ‘important’ or ‘very important’ to them that there was the potential to make friends using this medium. Now, in the era of so-called social media, one could expect that internet users in this type of setting would be receptive to learning about how to use social networking sites, both for interpersonal networks and job or career related reasons.

Interestingly a large proportion, eighteen of the 23 (with little difference between Case A and Case B) who rated the goal of ‘getting advice’ highly, said it was ‘important’ or ‘very important’ to them. This may reflect a high value placed on the idea of the internet as an information source, as well as a relatively high level of need among these participants for information relating to solving problems. This characteristic may relate to features of information poverty (see chapter 2, page 25) and also the need of information seekers in an ambiguous situation where “technology is essentially equivocal” (Vishwanath, 2006a, p. 324) to look to others for guidance (see section 2.1.1, pages 26 – 28), underscoring the importance of mentors for these users. ‘Playing or amusing yourself’ was seen to be

comparatively less important, rated highly by just six people among the group. Overall, an emphasis on social goals suggests a high value placed on social belonging among the research participants, a point developed by discussion in chapter 5, with recommendations built upon this in chapter 6.

Question B5 in the interview asked participants to reflect on a range of *activities* they mainly used the internet for at Time 1. 'Research or looking for information' was equally as popular as e-mail with the same number (fourteen of 22) reporting they did so weekly or daily, with no appreciable difference between Case A and Case B in this regard. 'Reading the news, weather or sports results' online was a weekly or daily activity for almost half (ten of 22) of the participants. Occasional activities were: playing games (for eight of 22 respondents) and surfing the internet (nine of 22). Online chat, reported by just four participants as a daily or weekly activity; banking (three of 22), job search (five) and shopping (one participant) were clearly not yet popular ways to use internet time in 2003. These results suggest a hierarchy of preferences for internet activities at Time 1. In order of popularity, these were e-mail, information search, news reading, surfing the net, games, job search, chat and banking.

Twelve of the 23 parents who answered question B7 (how frequently they were online, from 'hardly ever/every few weeks' to '1-2 times a week' and '3-5 times a week', to 'once a day' or 'several times a day') reported they did so at least once to several times a day. A greater number of those twelve more frequent users were from Case A than Case B, while internet use also seemed to be having an impact on other activities. Six of the respondents said they were spending less time with friends; the same number said they were reading newspapers less frequently, although some were choosing to do so online as shown in the previous paragraph, a trend that has greatly accelerated since then. One half of the frequently online were watching less television. **Participant A1** stated her television viewing time had decreased since getting the internet "because I am continually on the computer." Seven of 23 people said they were talking less on the telephone.

These findings are of interest in regard to the research goal, investigating the relationship between internet access and social cohesion. There is at least a suggestion here that internet use may displace other social activities (talking on the phone, spending time with friends) for a range of reasons, including the fact that Time 1 would have been a honeymoon period for people new to the internet. Some research finds that the more time people spend using the internet, the more they lose contact with their social environment (Nie & Erbring, 2000) on the basis that unlike television viewing, for example, the internet requires more attention and

engagement. Nie and Hillygus found support for “the displacement theory of time utilization...time spent on the Internet appears to come at the expense of time spent on social activities, hobbies, reading and TV viewing” (p. 1). An example of how this displacement may occur is **Participant A9** in my study who thought she was spending less time now talking to friends and family on the phone:

Yes, yes, yes, that's changed dramatically, because no one can get through...! I have my mother and my sister telling me they've been trying for days trying to get a hold of me, so yeah, I'd have to say that...

In this instance, the barrier thrown up by the internet is a physical one - the dial-up networking used for internet service uses the landline telephone connection, a technology still favoured by Computers in Homes for its families even in an era of relatively widely available broadband internet because it discourages the downloading of bandwidth-hungry files such as music and movies. So in this case displacement of social use of the telephone has not necessarily had anything to do with a decision made by the participant to avoid it in preference to the internet.

However given the small number of participants, this result is inconclusive; the hydraulic or displacement hypothesis is contentious (Moy, et al., 1999). Wellman ("Connected lives: The new social network operating system," 2009) now argues more strongly than ever that, as the “social network revolution” (ibid.) has become a feature of daily life, the creation and consumption of new media is evidently taking time away from sleep, and television viewing, but he is very clear on the basis of his research that the internet use is *not* impinging on sociability, and the number of social relationships enjoyed by internet users is actually greatly expanding. Two participants talked of the effect they felt internet use was having on their daily routine in the way asserted by Wellman (2009). I asked **Participant A27** (husband of **Participant A3**)

So in a way you're saying [*the internet is*] not really, fully, very positive because it's somehow taking away from other things in your life?

A27: Ummm... [*long pause*] No, I can't really say that it's taking away from other things except maybe sleep at the late end of night, um having one phone line to the house, anything that we do on the internet tends to be late at night when people aren't going to be trying to be phoning ...so it's very easy to suddenly discover it's 1 o'clock or 2 o'clock in the morning ... and that sort of affects the next day's work a bit.

Thus at Time 1 in late 2003, in common with “many initiatives *[that]* report high levels of initial enthusiasm” (Gaved & Anderson, 2006, p. 15), a range of evidence showed Computers in Homes parents involved in my research were active internet users making choices about how to use it, and motivated by a range of goals, especially social ones. Interviewees were excited about having the internet: “yes, all that weekend the phone must have been dead ... you know no one could get through!” (**Participant A1**) and in some households the youngsters were very engaged with the internet too: “[the 12 year old] is a real hog on the computer man!” which is exactly the sort of outcome aimed for by Computers in Homes.

On the whole, the group held positive attitudes about the impact of the internet on their lives. When asked, “Thinking about all the ‘pros and cons’ of the internet, would you say it has an overall positive or negative effect on your life?”, seventeen of 23 respondents reported a ‘positive’ or ‘very positive’ effect, with more stating this opinion at Case B than Case A. In a related item, a question asking how much respondents would miss the internet if they woke up tomorrow and found it had gone (question B3, Appendix 3), half of the 23 respondents reported that they would miss the internet ‘quite a lot’ or ‘extremely’. The cases differed here; with more respondents at Case A saying they would miss the internet than at Case B.

- INDIVIDUALS’ INTERNET USE

Internet access is often provided on the assumption that it will lead to ongoing use that will be instrumental in bringing about desirable social change, a proposition embedded in the research goal for this study. In order to explore the meaningfulness of this expectation, I determined through the research design process that it was necessary not only to assess internet use on the basis of participants’ stories and reflections from within personalised settings, but also to endeavour to track it quantitatively since an assumption of ongoing internet use underlies the research goal.

If free internet access is related at all with social cohesion, then satisfactory evidence for this proposition would surely be that a majority of those given free internet access would retain it, make use of it, and go on as active internet users to demonstrate active engagement across the dimensions of social cohesion shown in Figure 2-3 (page 66), especially at the individual level. In this section of the chapter, I summarise quantitative results for individual internet users which will show the extent to which they did develop a relationship with the internet, using the Internet Connectedness Index (see section 3.5.1, pages 111 - 113) data.

A composite measure of internet use, the Internet Connectedness Index (ICI) was developed for its usefulness in tracking how much use was made of the internet among individual participants in the two case studies. Arguably, any formula for determining the extent to which individuals are internet users is arbitrary, and certainly other models exist, such as in the Digital Future Project (USC Annenberg School for Communication, 2009) which defines heavy internet use as more than 24 hours per week of use, while fewer than five hours distinguishes the light user. This is a blunt instrument. I was convinced by my reading that it was more meaningful in this study to construct something more holistic than an hours-of-use assessment. In section 3.5.1 (pages 111 - 113), I set out the rationale for and construction of the ICI, which has the effect of compressing data on a range of internet behaviours and attitudes, such as those summarised separately above, into a single value for each respondent. The purpose of doing this is to obtain a holistic rating of a person's overall engagement with the internet, including eight items from the interview schedule. The ICI is therefore a value of the extent to which a person uses the internet, including: the range of activities regularly performed; the range of a person's internet goals; their hours of use; their self-rated perception of internet dependency, and more.

Data analysis was conducted in Excel as shown in chapter 3, section 3.7.1 (page 125). Missing data on aspects of internet use for five of the 26 first phase participants, and exclusion of one participant from school C in order to focus on two case studies, meant that ICI ratings were generated for 20 individuals, as shown below.

Case A or Case B Code #	Index 1 – 12 Time 1	High- or low- connector
A1	7.66	High
A3	6.25	-
A4	5.27	-
A6	7.41	High
A8	5.96	-
A9	5.75	-
A10	5.62	-
B12	6.74	-
B13	5.93	-
B14	5.68	-

Case A or Case B Code #	Index 1 – 12 Time 1	High- or low- connector
B15	7.57	High
B16	2.10	Low
B17	7.50	High
B18	4.55	Low
B19	5.42	-
B20	2.05	Low
B21	3.57	Low
B22	4.22	Low
B24	4.71	Low
A25	8.99	High
<i>N = 20</i>	<i>Average ICI = 5.64</i>	<i>5 high, 6 low connectors</i>

Table 4-1: Internet Connectedness at Time 1

Closer inspection of Table 4-1 shows that five individuals have high indices, and six have low indices, a variation in outcome for the individual participants that might be expected. Possible causes include varying levels of confidence, interest, motivation, technical skill, and information literacy. As shown in the literature review, digital inequality extends to unequal use as well as unequal access (DiMaggio, et al., 2004; Hargittai, 2004). Uncertainty about the new technology, which may be reduced by seeking information from others, could also be a factor because “the symbolic meaning of technology is jointly produced through the individual’s interaction with the technology and the larger social structure within which the individual is embedded” (Vishwanath, 2006a, p. 324) and in the early stage of adjusting to having internet access at home, some individuals may need more social support.

Meanings ascribed to the data in Table 4-1 depend on the way the data are viewed. As they stand, a normative, positivist interpretation is apparent, with categories of user identified and decisions about benchmarks of what is ‘high’ or ‘low’ internet use being made by the researcher, and a “statistical reduction” (Alvesson & Deetz, 2000) used which is arguably at odds with an interpretive research orientation in the present study. For example, based on 20 ICI scores, the mean lies around 5.7 out of 12, so in that sense a ‘normal’ range could be inferred, but it would only be relative to this small group. On the other hand, if all 26 participants from Case A (12) and Case B (14) were included, rather than removing those for

whom some data were missing (such as Participants A3 and B23 who were not connected to the internet at all), then internet use looks even less positive than in Table 4-2 as the low end, including low-connectors and non-users, would be a considerably larger sub-group.

In a 'within-study' comparative context, limited to the individuals involved in the two case studies in this research, the ICI is a useful device principally because it enables change to be observed in individual cases, as well as contrast between the case study groups. An overall view of the participants still involved at Time 2 reveals a decline in internet use, a finding (shown in Table 4-2, page 152) which is of special interest in view of the research goal in this study. Also Case A and Case B outcomes in regard to internet use and social cohesion may be related. These key findings will be addressed in full later in this chapter and discussed in-depth in chapter 5. Thus the reductive ICI device has some usefulness for comparing sub-groups (low-connectors, and high-connectors), comparing two points in time (more Case A parents retaining internet use than Case B by Time 2), and for assisting in drawing conclusions on the research goal.

Further data relating to low and high engagement with the internet as defined by the ICI ratings are now presented.

- HIGH-CONNECTORS

Interview transcripts together with ICI ratings identify five participants of the 20 shown in Table 4-1 (**Participants A1, A6, B15, B17 and A25**) as highly engaged internet users, and my observation showed they also shared characteristics of communicative confidence in interviews and other interpersonal settings such as meetings and training sessions. One example is **Participant A25** whose first phase ICI was 8.99, while anecdotal evidence (such as comments at a parents' meeting including "she's the Internet Queen!") and her own commentary as an ardent internet user while at home caring for her elderly father ("It's managed to keep me at home ...if I can't get out to communicate, well, communicate this way!") are congruent with her relatively high ICI. She is online several times a day: "sometimes I can be online for hours but everybody complains you know and I'm going 'Oh whatever! - what's the complaint?'" In respect of her internet use, **A25** sees it as providing a new meaning to her life at home as caregiver:

...other than that mate I was a real baddie – I used to be constantly gone, it was like if ever someone walked in to come and look after him, I'm gone I'm just ... it's just boredom, it's just ...

To do what?

I would just go out shopping, just go out browsing, it's like but now since this is here it's like – I just stay home, I'm quite comfortable just staying in my own home, just locking the doors and – get away, leave us alone.

Participant **B15**, an unemployed father of six, was another most talkative and enthusiastic internet user, a high-connector at Time 1. He drew an interesting connection between his enjoyment of e-mail and Māori playfulness, so that the new communication medium appealed to this side of his character:

Because you go - all you see is just the words and, and, and and – your words... like it's just being a typical Maori, when they have a 'tutu'¹⁴ – you know when you see something, you don't know what's behind it, but you gotta find out, eh! So, yeah, and you just see some words up there, click onto it, and it opens up the page.

His playful enjoyment of, in particular, e-mail and online chat with people in other countries may relate to the *korero* aspect of Māori culture – the emphasis on talk, relationships, giving time to hearing others' opinions – so that having access to the internet gave **B15** an additional tool with which to immerse himself in talk. This is clear in his interview transcript. He and his wife, who was present at his interview, clearly also used their mobile phone a great deal. In person he was cheerful, upbeat, excited about the internet, opinionated about neighbourhood issues, sincere about his role as father, and grateful for the role played by the church in his life. His story is told in more detail in section 4.2.1 (pages 164 - 165).

The theory that “the personal internet” (“Connected lives: The new social network operating system,” 2009) and mobile connectivity, as in cell phones (and now, increasingly, laptops) are enabling the already socially networked to be even more so, rather than becoming socially insular, appears borne out in cases such as **A25** and **B15** above. Of further interest is that the group of more engaged users (**A1**, **A6**, **B15**, **B17** and **A25**) tended to also be substantial consumers of other media in addition to the internet. In particular, their other media consumption involved television (four out of five watched three to four hours per day) and radio (three out of five spent more than five hours per day listening to it), more than print media. **Participant A1** was typical, saying in reference to radio “I usually have it on all the time...more for background.” These results are consistent with the literature. Wellman and Hampton (2001) note that although there appeared to be a correlation between heavy

¹⁴ Play

internet use and civic engagement (the term they prefer to social cohesion, and generally understood to mean active involvement in life outside the home) in their research on Netville in Toronto, “for the most part this did not mean people became more engaged. Rather, those already engaged are increasingly using the internet as an additional tool” (Hampton & Wellman, 2001, cited in Gaved & Anderson, 2006, p. 19).

Cross-checking with the responses of the five high-connector internet users on aspects of community belongingness show they were: interested in knowing their neighbours (all of them reporting themselves to be ‘interested’ or ‘very interested’), enjoyed meeting and making friends with them (likewise), were sufficiently familiar with neighbours to know their names and say hello (likewise), and were most unlikely to leave the neighbourhood (all stating ‘unlikely’ or ‘very unlikely’). Four of the five said they had visited or phoned someone just to talk, that day or the day before, and four were in the habit of phoning their families every day. **Participant A3**, a moderately keen user who became a high-connector later, is another example of actively engaging in her social networks. She phones her mother usually four times a day, her mother in law every two days, meets with teachers at the school and kindergarten, and “I have a friend who I met through Parents’ Centre and I am communicating with at the moment on a fairly regular basis.” Given the research goal in this study, it is possible to see a relationship here between the more engaged internet users and behaviours associated with individual level social cohesion. Among these behaviours are social connectedness, including interaction with friends and family (refer section 4.2.1, pages 160 - 162).

Participant A3 was a highly social, articulate, motivated and confident respondent whose internet use increased from Time 1 to Time 2 with the set-up of a family business at home, with her husband, **Participant A27** who I interviewed at the same time. **A3** was a highly strategic manager of the household’s communications media in a manner consistent with the view of Hampton and Wellman (2001) above. She intended that the internet would be an additional tactical tool in creating a better life for the family via a business plan. More of her story is told in section 4.2.1, pages 168 - 169).

We read the local newspapers and there’s always kindy and school gossip and the new school being developed – and I participate in the Discussion Quorum. And I still take teachers aside and ‘earwig’ them. It’s where I was this morning. You are appointment number 5 in the day!

As the following detail on the couple’s management of the family’s life and the place of media within it will show, **Participant A3** in particular manages to be very involved in life outside the home (a feature of social cohesion at individual level) by carefully managing the

encroachment of any one medium on the family's time or attention. Later in her interview she said that that day she had "been to see the school, I've been to a Hippy¹⁵ meeting; yesterday was kindergarten, shopping, had to go to the chemist..." A very direct, no-nonsense person, **A3** was prepared to go and speak to relevant people she felt would be able to help, she was active and engaged, a person already networking effectively and most likely to go on to make use of the internet to better her family's life. Social theorist Pierre Bourdieu (see section 2.1.3) took the view that some individuals make strategic use of the opportunities that arise in their 'habitus' and by making the most of these, escape the process of social reproduction that might otherwise determine only a certain type of future. **Participant A3** is perhaps the clearest example of this possibility in the present study: this almost entrepreneurial aspect along with other features of her conduct within Case A, together with other leading individuals, will be explored more fully in this chapter and in chapter 5, Discussion. **Participant A4** is another good example: his story is found on pages 171 - 173.

By the time of her second interview a little less than a year later, **A3** and her husband **A27** showed an even more strategic use of available media in their home. It was clear to me in interviewing them that all such aspects of family life were deeply considered matters for them both. In reference to newspapers, which she enjoyed but he didn't ("I don't read newspapers, no"), they were gently in dispute:

A3: I read more news than he does – um, and we went through a term where the school was giving each child a newspaper a day – and that was really good, um- but he didn't like it at all

A27: I disagree – I don't think it's really good at all, ah...

A3: Cos it took an extra 20 minutes out of my day!

A27: ...not only does it take much more time to go through the newspaper, you hand the Herald to an 8 year old kid and every second copy he brings home it's got something pretty horrific in graphic detail on the front page. And I really don't think that kids need to be immersed in that sort of thing. So newspapers and television news and stuff like that, I really don't think it's family-friendly at all. So I don't mind having the information, just not at family time and thrust at the kids.

A3: But we have a slightly different case, too – J---- is the youngest in his class, he's actually really behind the rest of the class, so whether the newspaper was going out for year 5s and 6s, which would probably have the ability to assimilate the news better, we can't really say but for our son, we don't

¹⁵ Home Interaction Programme for Parents and Youngsters. "HIPPIY is a home based programme that supports parents in becoming actively involved in their four and five year old children's learning" (Great Potentials Foundation, 2009).

let him watch the news, we don't really want him being exposed to what's not nice, other than what we've filtered.

A27: So the idea of getting this information from the internet in a way that we can filter what's suitable is very attractive.

It may be that with a wider range of media to choose from, high-connectors become adept at using each medium selectively. For example, results at the time of writing from the eighth annual Digital Future Project (2009) show rapidly changing news reading habits, especially among heavier internet users who show “a large increase in time reading online newspapers” (USC Annenberg School for Communication, 2009, ¶1).

Television viewing was also a leisure activity to be carefully fitted around other priorities and enjoyed by **A3** and **A27** as a couple. **A27** seemed to feel that somehow the arrival of the internet had led to a more conscious approach to the use of each medium:

We have a huge backlog of movies – we generally don't watch anything while it screens because we'd much rather tape it and not have to watch the ads but as a result of that there's a lot of movies that we haven't got around to watching yet and more often I find myself thinking well, I could watch a movie but I'd rather go and look up something that I'm in the middle of researching, um so I think it has affected my television watching. I do watch less television. But curiously the amount of time that has – my weekly television watching has decreased by x amount of hours but I'm not using the same amount of hours to go and use the internet, so I'm watching less television but I'm not using the same time on the internet...but it's the internet that's motivated me to watch television. It's made me lower the priority of television. Which has got to be a good thing.

Once more the view that “those already engaged are increasingly using the internet as an additional tool” (Hampton & Wellman, 2001) appears very appropriate. The couple had a judicious approach to the internet in the same way that they had with newspapers and television, rating its overall effect on their lives as somewhat positive (a 4 on a Likert scale of 1 - 5). I asked

Do you want to elaborate or expand – maybe why it isn't a 5, or...?

A27: Mm, the possibility for that machine to use up hours out of the week that we didn't have anyway – is very large... Um the diary is already far too full and there simply aren't enough hours in any day um but there are so many things that you tell yourself that you really need to do with the computer, it's so easy to spend too much time.

The husband used the expression “that machine” a number of times in the interview, a depersonalisation of the computer that suggests a slight suspicion and a need to control it. However I observed that overall the arrival of the internet in this household had been a very significant event that had changed **A27**’s sense of optimism and control for the better. When asked (interview question B3) how much he would miss the internet if it vanished, he said

I think I would miss it a great deal, um I would miss the potential of it rather than the actual use of it, probably - so yeah I’d have to say 5.

Finally, as illustration of the high-connectors’ other media use, I return to **Participant A25**. A year or so after interviewing her the first time, on my return – to a torrent of opinion about the Computers in Homes experience – **A25** talked with humour and often hilarity about life in her household with the internet (refer to the transcript of this conversation, pages 276 – 281). Of television viewing, she estimated that the time involved had not changed since starting to use the internet: “I still watch the same, yeah. I mean I don’t miss a blow with two screens! *[laughs]*. Then you can go into any room and watch any channel you like ...see like there’s about...one-two-three-four TVs in this house.” However to an extent I sensed that she was ‘grazing’ across the different media – picking away at e-mail and chat room activity here and there in passing, while television was likely to be often on as well, as it was on the day of the second interview. Her own comments suggest ambivalence about TV, contrary to her opinion (above) that she was watching the same amount: “And then God when Sky’s on and then these kids are home you just don’t bother watching the TV. And then when you’ve got ah my partner home it’s like nah you just don’t bother watching...”

This section has shown that the high-connectors at Time 1 in the study shared features of confidence, sociability, and enthusiasm for internet use as an additional media tool which was managed strategically for what it could add to the life of the household. This ready ability to manage the medium for what it could offer may have helped them to also build on their social connectedness, a feature of social cohesion. A point noted in the review of the literature in chapter 2 (section 2.1.1, page 29) that should be recalled here is the view derived from a meta-analysis of community internet research that “those who are socially content, trust others, have lots of people to draw on for support and believe that others are generally fair, are also more likely to be wired” (Loader & Keeble, 2004, p. 29). Results of the present study suggest that those individuals in a group setting showing high levels of engagement, high sociability and trust, who also tend to be high-connectors (such as **A25**, **A3**), may function as opinion leaders among those who are tentative about an equivocal, though compelling, technology.

- LOW-CONNECTORS

A sub-group of participants who engaged less intensely with the internet is identifiable on the basis of my observation and interaction in interview settings as well as the data from transcripts and the ICI process (refer Table 4-1, page 141 - 142). Among the full group of 26, a further five people had either not managed to connect to the internet by the time of their first interview (and for whom, therefore, a calculation of an ICI was not possible), or data were missing for various reasons.

Internet low-connectors were, on the whole, less sociable and slightly more insular in their neighbouring behaviours than the high-connectors. For example, whereas internet high-connectors counted eight, ten, eleven, and 25 neighbours they knew well enough to say hello to, low-connectors stated numbers such as one, two, four and six neighbours. **Participant B24**, from Rarotonga, preferred to maintain a more dispersed cultural network than that in the immediate neighbourhood, where he remarked on individual neighbours' ethnicity, and appeared to see himself as not belonging in that sense. He said he would only ask for help if he needed it from a nearby man who was from Rarotonga like himself. Kearns and Forrest (2000) comment that where social cohesion is understood as social harmony, "social order rests upon tolerance between individuals and groups (for example, between different ethnic groups or between the generations)" (p. 998). If the above type of cultural insularity is typical of Case B, it may be a factor at play in lower social cohesion at this site.

However, overall these respondents showed similar levels to the high-connectors of interest in knowing neighbours, enjoyment in meeting them and a sense that it is easy to become friends with them. It could be inferred on this basis that low-connectors may be positively inclined towards social relationships but, in practice, keep to themselves more. Further research would be needed to test this proposition. Another possibility is a social desirability bias, in which some interviewees over-reported what they assumed to be the expected answers (that is, positive attitudes towards neighbours). However I am confident that the interview conditions and an emphasis on low-key informality in my relationship with interviewees were such that this type of response was unlikely, and nor do I think that this created an impression that there was stronger social cohesion present in these settings than was in fact there.

As with the more highly-engaged internet users, the majority of the less engaged individuals were very unlikely to relocate to another area: seven out of 11 responded on question A7 that they were quite, or extremely, unlikely to leave the area within the next one to two years, with

only two believing such a move to be likely. The majority also regularly phoned their families, either weekly or daily. In this sense these participants also appeared comfortable in their local surroundings as well as having active social networks.

Lack of motivation may have been a factor in using the internet less: **Participant B20** was happy about the *idea* of what was possible on the internet, but said he wouldn't miss it much,

...probably because I don't use it that much – you know unless I wanted to go and have a look at what I want to look at like the V8s and all that sort of thing but I don't do that very often and I'm only doing it because I'm bored...you know yeah I prefer to get out the Playstation – have a go on the Playstation – that's me.

It may be that individuals like **B20** simply need to be shown what they can do, and be in the company of high-connectors so that they can learn from the example of more experienced internet users. Another low-connector, **Participant B18**, was somewhat constrained in e-mailing family (question B9) because “none of the family has got the e-mail so no, that would be never”, which suggests that becoming more active and confident in internet use is more likely where others you know are online too. **Participant B16** said of e-mailing that “I don't know how to I've set it up and everything, but ... I've sent an e-mail once to my – I have a cousin over just to try it out over in England and – I don't know whether she got it or not.”

Participant A8 was keen enough to have the internet (“Oh I'd say I'd really miss it”) at home for her son, and although she used it a little, she had internet access at work so tended to use it there. She valued e-mail however for the increased feeling of connectedness to family and friends, like the “ones over in Brisbane – we never really communicated but since being able to e-mail and the same things with them they work different hours and time changes and you're more able to keep in touch with them online and you get a response so ...” and “Just because my brother - being able to e-mail him, where it's kinda we are a lot closer, I mean we are closer, we just chat a lot more and kinda have time to actually get to have a good chat, when we catch up and we e-mail each other on a regular basis.” This type of response bears out Wellman's argument that “technology helps people to manage larger and more diverse networks” (“Connected lives: The new social network operating system,” 2009), adding to their capacity to stay connected with those who are spatially distant.

Although low-connectors spend somewhat less time as media consumers than internet high-connectors, real distinctions between the groups are difficult to establish, unless household contexts are taken into account. For example these low-connectors individuals tended to be preoccupied with family matters such as caring for young or sick children, house rental

concerns and uncertainty over where to live, adjustment to unemployment, juggling two jobs with child rearing, or being a grandmother and caregiver of young school children. However high-connector participants were arguably also dealing with challenges.

Participant B24, a low-connector grandfather with firm ideas about keeping the internet in its place, was in no hurry to get started with his computer:

Well I started ah – it was I got mine before Christmas eh before I left for the islands I – but when I got back from the islands in late January I haven't been really ... because we were so busy with other things. My kids came from Australia so I didn't have time and everything now is slowly settling down... when I came back from the islands, as I said I...wasn't really with it, I was so busy. Now slowly everything is slowing down and so on, slowly getting back...

This was not, therefore, a family experiencing critical 'issues'. However if these are present in addition to busy commitments, motivation or time available for the internet may be easily eroded. Anxieties over internet risks were also noted with two low-connectors, including **B24** (above) whose concerns are summarised in section 4.1.2, page 155.

4.1.2 TIME 2

- TRENDS FROM TIME 1 TO TIME 2

Fourteen of the original group of 23 in this study dropped out by Time 2, mainly due to returning the computer to the school (for reasons unknown) and moving from the area. In some cases I could no longer contact families because phone numbers had been changed; in others, I learned that the internet had never been successfully accessed.

I was interested in how intensely people engaged with the internet in the study so that I could assess what relationship existed between this and social cohesion. In the course of interviewing the parents who remained involved in Computers in Homes at Time 2 (late 2004 to early 2005), I asked once again about the details of internet use exactly as I had at Time 1. I found for the nine participants that some evidence of change was present:

Code # Case A or B	Index 1 – 12 Time 1	High- or low- connector	Index 1 – 12 Time 2	Change
1 (A)	7.66	high	6.69	Decreased
3 (A)	6.25		7.30	Increased

Code # Case A or B	Index 1 – 12 Time 1	High- or low- connector	Index 1 – 12 Time 2	Change
4 (A)	5.27		3.67	Decreased
6 (A)	7.41	high	6.0	Decreased
8 (A)	5.96		5.66	Decreased
9 (A)	5.75		6.38	Increased
13 (B)	5.93		7.68	Increased
24 (B)	4.71	low	4.18	Decreased
25 (A)	8.99	high	8.96	Static

Table 4-2: Internet Connectedness Time 1 to Time 2

Three trends can be observed in these data. First, a range of experiences is captured here in a reduced form: from the highly-connected individual who remained enthusiastic (**A25**), to the highly connected whose use fell away (**A1, A6**), to the low-end user who evidently became more interested (**B13, A9**) and so on. Second, however, on the whole a slight decrease in internet engagement is seen. Third, the majority of those who remained actively involved in using the internet at Time 2 were from Case A. This may be coincidental, or may be related to shared motivation or a sense of belonging to a committed group, as will be explored later in this chapter. This finding should be set alongside the sense I had from an observer's perspective, and also someone involved in interacting with those in both case studies over a long period of time that Case A exhibited more of the behaviours and characteristics associated with social cohesion. If this viewpoint is accepted as reliable, then the findings begin to point towards a relationship of some kind, under certain conditions as embodied in Case A, between internet use and social cohesion.

- BARRIERS TO INTERNET USE

Domestic transience appeared to be a feature of the Computers in Homes populations at both Case A and Case B. It contributed to sample attrition in this study; and not only was it mentioned by a principal at Case A (see section 4.2.2, Case A, page 186), one of the parent interviewees, **Participant A3** commented on it very candidly, turning the tables on me by asking "Are you going to compare [research participants' feeling of belonging] with the transiency levels of the community?" She went on to remark to me that I should approach "the Parish Priest [because] he said there's about a three year ...people changed, moved on

about every three years...Certain communities are more stable than others in general.” For Computers in Homes as well as the schools, keeping track of families on their rolls is a challenge. Thirteen of the 22 individuals for whom data was complete, surveyed at Time 1, were unavailable at Time 2, leaving nine of the original group in this study at the end. The 13 who dropped out of the Computers in Homes scheme and thus my research were mostly from Case B, with 11 dropping out, and just two dropping out from Case A.

A variety of factors contributed to these situations, including households moving to another area and family break ups. Keeping in touch with families proved difficult. Phone contact was often unreliable whether a cell phone or landline number had been provided, and irrespective of the time of day I called. However there is little in common from one individual to the next in regard to possible reasons for not continuing with their internet trial. Some parents simply told me they had decided to return the computer. Again, while I could not ascertain reasons in most cases, it may be given the low educational achievement of many individuals, and the fact that “the internet makes different cognitive demands on the user compared to other communication technologies” (Kubicek, 2000, cited in Doherty, et al., 2003, p. 3), the sheer unfamiliarity of the technology may be seriously off-putting. Thus:

Perceived lack of ability to use would clearly be a factor in self-exclusion from use of the Internet for certain sections of the population, and in particular those who have completed less formal education. (Kubicek, 2000, cited in Doherty, et al., 2003, p. 3)

I would go on to infer that if uncertainty, anxiety, and the fact that “technology is essentially equivocal” (Vishwanath, 2006a, p. 324) is an issue for many Computers in Homes families, then there is a much more acute need for an emphasis on the socially supportive elements of group cohesion.

A number of other unanticipated difficulties occurred for families in this study in successfully engaging with the internet over the long term. Even an apparent strength of the Computers in Homes scheme whereby parents mentor the less skilled can be problematic. One mentor reported of another parent who, “instead of listening to what he was supposed to do, he went and hooked himself up with Xtra”. This was the wrong Internet Service Provider, so he was billed for internet time. “So,” said **Participant A9**, the mentor:

He's wasted a whole lot of time... I've been to his house, I've asked him, I've rung him...weekly..., asked him if everything was going all right, and then he rings me up and tells me he's got this bill for Xtra And I am not sure whether that was because I'm a woman and he's got a thing about women

telling him what to door he just....went and did what he wanted..... I mean I really don't know where he was coming from.

The parent referred to by **A9** subsequently became one of the internet dropouts.

Technical issues were not always addressed by the supposed availability of a technician at the school. **Participant B18** was somewhat thwarted in her internet use because of a hardware problem “so until I sort the problem out it’s restricting me to get on it at the moment because you sort of get interested in doing something and you’re half way in the middle of it and next minute...you get so annoyed with it because it... just nothing will work” and had had problems from the beginning when she and her husband had not been able to connect to the internet at all. With assistance from The Ark, the computer recycling company that supplies Computers in Homes computers, they had success but continued to be plagued with glitches. **Participant A1**, a keen internet user from the beginning, wanted to be able to use a printer, and a CD drive which the computer did not have. The technician had not followed up on this:

He was supposed to get in touch with us, he had a list of things that we could hook on there that would be compatible with that computer, and I had a word with him and he said I'll get in touch with you, because we've found someone that can get them cheaper, or cheap, and I haven't heard from him yet.

Perceived limitations of the Computers in Homes equipment provided were clear in other cases, such as **Participant B20**, who remarked “the let-down with this one is it’s got no CD drive...that’s a bit of a downer for that reason because I want to get the learning disks for her [his daughter]. Computers in Homes however has a rationale for providing adequate but basic hardware with dial-up networking, saying

Computers in Homes does not use new hardware for a number of reasons. Its aim is to introduce families to ICT, not to be a handout programme of new computers that could then be target for theft or on-sale ... Computers in Homes agrees that broadband is the superior option but fiscal restraints do not allow this, so we have to weigh the benefits of connecting more families to dialup for less. We also find that dialup discourages indiscriminate downloading of non-educational material from the internet while parents are coming to grips with new technology. (Das, 2008, p. 6)

Other more preventible technical barriers I observed were inadequate telephone connections and cabling.

Finally, interviews revealed a lack of confidence and even anxiety over perceived internet dangers. For instance, concerns were expressed among some interviewees that the internet

represents some kind of threat to their family lives. **Participant B24** demonstrated strong family values and a deep attachment to Church and Rarotongan community activities, tending to be dismissive of technology although in a good-natured way. While he had bought his own computer, recognising its potential as a tool for information retrieval, his use was conservative and he continued to rate as a low-connector at Time 2. For example, he would not permit his young grandchildren to use the internet. He was however a daily user of e-mail (if only for a short time at each sitting), because it gave him ready access to family and friends in Rarotonga and in Japan. He said he had never wanted to be “connected”, being very clear in his view that such talk made him think of robots, not humans – a choice of words that puts me in mind of **Participant A27** and his use of the phrase “that machine.” **Participant B24** had an entirely pragmatic view of the internet: it had a place, but was to be kept *in* its place. Although seeing the potential, he was also anxious about rushing into it:

The more I use it the more I see the possibilities you know ... I'm talking about the wealth of information on it ... like booking online and all that talking through e-mail you know... But oh at the same time I'm wary. I just want to work my way through and have a look. I'm not going to rush into things. Because I don't really understand it.

He also showed concern about the effects of media use on the quality of family life:

Actually I try and ... make sure I don't let the internet take over my family... I don't want to be like that – I just want to use it. Because I think the more I rely on it the more I want to watch it all the time, you know ... Because ... other people get too involved in it, and then their families suffer. ... I got to be careful, I got to be – have a balance, that's what I mean.

Similarly a grandmother, **Participant B23**, who cared for her young granddaughters and was therefore the responsible party in regard to the Computers in Homes computer, wanted it to benefit the family. However she viewed it as somehow dangerous. Not only was it behind a closed bedroom door rather than in a family living area on the day of the interview, it was too far from the telephone jack for the internet cable to plug in, and she remarked:

No, I heard all about this internet – some time I don't even really... but I got to use it for school...I want to be careful of these two you see... I think they got a fair idea of what it's about, this internet – these two here...just want to find out more about it you see, because they know how to do it all right, even her [*the 7 year old*].

Observation of the placement of the computer in the household also implied certain views of its place or importance. In the home described above, the computer was in a closed front

room that was not accessible to the young children. In several other homes it was placed on a special table, sometimes with a lacy tablecloth under or over it (as is typical in Pasifika family homes, for the decoration of revered family items of great value), somewhere near the main living area, but not in it. The most noticeable placement of the computer however was alongside the line up of household entertainment technologies - the large television set, the stereo, the play-station. To this extent it may be viewed as another gadget, and one of the participants referred to it as such. A similar point is made by Ross Himona (2003), who remarks

The adoption of the music CD, VCR and digital TV technologies by poor people in my country puts the lie to the concept of a digital divide in Aotearoa/New Zealand. Poor people adopted those quite expensive technologies regardless of their economic circumstances, and they adopted and paid for access to those technologies in order to gain access to entertainment, i.e. to music, movies and sport. In the poorest areas of Aotearoa New Zealand houses and shacks bristle with CD players, VCRs and digital TV dishes. (2003, cited in Ashton & Thorns, 2004, p.2)

Household stability issues and barriers such as those set out above form part of the context of internet use, and further stories are pursued in the section on the 'routine day to day life', section 4.2.1. A mix of anxiety, wariness, awe and a wish to keep the technology in its place underlies the technical and physical barriers: "Thus, for many the Internet may present as an unfamiliar experience behind which is a complex technology that appears to have almost magical powers" (Doherty, et al., 2003, p. 4).

4.13 SUMMARY: INTERNET USE AT CASE A AND CASE B

Overall the results in this section have shown, for the entire respondent group from both cases where data were complete, and excluding Participant 26 as she was from a third school site outside of Case A and Case B, enthusiasm for aspects of internet use at Time 1 of Computers in Homes, especially e-mail, pursuing social goals and getting advice. There is some suggestion that internet use may have been displacing other social activities at this time, a result that can also be viewed in the context of a honeymoon effect, in other words a temporary state of affairs which longer-term research would be required to track. On the other hand, there was also evidence that internet use was greatly extending some users' social networks generally, rather than eroding them. High-connectors were communicative, and typically were keen consumers of other media as well as the internet, tending to be conscious managers of their media use, while some evidence also suggests a 'grazing' approach to media generally. They were also evidently more established in their neighbourhood

networking, as well as being active volunteers. Low-connectors tended to be slightly more insular. Their internet use seemed more easily displaced or affected by extraneous household factors and possibly the unfamiliarity of the medium, anxiety, lack of confidence or motivation.

A large attrition rate caused the number of parents involved in Computers in Homes at the schools, and therefore this research, to drop by Time 2. Many more were from Case B, and of those remaining, connectedness had declined slightly. However proportionately many more of those still committed to continuing to use their home internet were at Case A (seven) rather than Case B (two).

4.2 SOCIAL COHESION

A combination of types of evidence from two case studies was assembled to determine the extent to which there may be a relationship between internet access and social cohesion in the free home internet scheme. The need for different types of evidence relates to the qualitative orientation of the study, the levels of inquiry from micro to macro implied by the research goal, and the need for sufficient relevant data and the advantage of what Robert Yin calls a “crosswalk between the questions of interest and the likely sources of evidence” (2003, p. 74). This “crosswalk” (ibid.) is especially visible in this section on social cohesion, which integrates interview material with contrasting, supporting or corroborating quantitative data, and researcher observation.

The organising principle for this section of results is determined by the way social cohesion is operationalised for the study. In chapter 3, this construct was defined as comprising several group level conditions and individual level attitudes and behaviours, to be assessed through a mixed methods research design. At the individual level, social cohesion was defined by **social connectedness** (evidenced by unpaid work outside the home, access to telecommunications, and interaction with family and friends), **routine day to day life, inclusion, support, and place attachment and identity**. At the group level, social cohesion was defined by three characteristics, these being **networks of mutual support, social capital, and social solidarity**. This schema is shown in Table 3-4, pages 115 – 117.

Results relating to the individual and group level dimensions of social cohesion listed above are now set out. While they are itemised separately for the purposes of creating order among the results, it becomes clear that the social cohesion dimensions at least inter-relate and at

times overlap to some degree. Therefore results presented under one dimension could well also be relevant to another. It is as the results accumulate and form a whole that the dimensions or components of social cohesion in each case study can increasingly be viewed in a more meaningful way. By this process, a holistic view across the two cases is presented close to the end of the chapter in Table 4-3 (page 203). The weight of evidence in a particular direction is discerned progressively as this section on social cohesion, in two parts, unfolds, and becomes the basis for discussion of results vis a vis the research goal in chapter 5.

The first part of this section of social cohesion results below addresses the individual level; the second part addresses the group level.

4.2.1 INDIVIDUAL BEHAVIOURS

I determined through the research design described in chapter 3 to obtain data on social cohesion by viewing it on two levels: individual behaviours, and group conditions and outcomes. Given that my approach was often to individual Computers in Homes participants there were many opportunities to gather evidence on individual behaviours.

- **SOCIAL CONNECTEDNESS**

As shown in Table 3-4, I resolved a range of dimensions of social cohesion for assessment based on a review of the literature (refer Figure 2-3, page 66). New Zealand's Ministry of Social Development uses the term social connectedness (Ministry of Social Development, 2006) as being equivalent to social cohesion, and report that it is identifiable by five indicators¹⁶, three of which I have selected for assessment in this research. One other indicator, trust in others, is reported on in the sub-section entitled 'Support' later in this section. An earlier version of the ministry website from which I accessed the three dimensions reported on here used the phrase "household access to telecommunications" and this now appears on the site (Ministry of Social Development, 2006) as "telephone and internet access in the home", a feature which can be assumed as a 'given' in this study because the research participants were given internet access as Computers in Homes families. It is clear from the inclusion of this characteristic as an indicator of social connectedness that the Ministry of Social Development views telecommunications and internet access as integral to people's

¹⁶ The Ministry of Social Development has since altered its indicators, omitting "unpaid work outside the home" which was previously listed. This indicator of volunteerism is relevant to social cohesion, so I have continued to include data on it here.

ability to participate in society: again, the relationship between the internet and positive social outcomes is assumed.

UNPAID WORK OUTSIDE THE HOME

At Case A, five of the nine respondents were based at home – either working at home, being a caregiver, retired or disabled – and therefore had the flexibility to be able to commit time to unpaid work. Of these five, four were involved in volunteer activity of some kind. At Case B, eight of the 13 were based at home; of these, most were not obviously involved in unpaid work except **B24** who was very involved in his church/community centre, and **B15** to a limited extent, whose story is told on pages 164 - 165. On the face of it, in this aspect there was a marked difference between Case A and Case B.

At Case A, **Participant A1** showed that she enjoyed the opportunity to help out at the school: “Well they only need...not even monthly ... like every term they have a trip or something ...They always ask mums – I don’t know why – it’s so nice.” **Participants A4** and **A5**, a married couple, were both very involved at their school as shown in detail in other sections throughout this chapter; **Participant A6** was involved in a health support group related to her child’s illness. **Participant A8** was a volunteer mentor to other Computers in Homes parents, helping out where she was able. **Participant A3** is cited extensively in this chapter for her views on the community in general and her own actions that fall within the broad concept of volunteerism. The scale of her contribution becomes apparent as the chapter unfolds.

HOUSEHOLD ACCESS TO TELECOMMUNICATIONS

Clearly, all households involved in this research had free internet access provided by Computers in Homes. To this extent, the Ministry of Social Development (2006) would consider this gives some assurance of social connectedness among the community groups concerned.

However, survey and interview data show that response to and use of the internet access varied, as demonstrated in the results summarised in section 4.1 (from page 134). Briefly reiterating, there were more high-connectors in Case A than in Case B, while all six low-connectors in the research group as a whole came from Case B. On this basis, internet uptake was evidently more successful initially in Case A. Only two participants from Case B remained involved in Computers in Homes by Time 2, while the remaining seven in the final group of nine were from Case A. After one year, internet uptake was retained by significantly

more participants in Case A than Case B. Thus, although the households were supplied with telephone and internet access, this did not mean it was used.

Participant A1 laughed in talking of whether various typical daily activities like watching television and spending time with family had changed since using the internet, that her 'attending events and activities' (interview question C1) was unchanged but "I will get off it [*the internet*] if I have to go and do something, because you have to!" Her mock self-admonishment acknowledges she found internet use compelling and enjoyable. In her case, internet access did become effective use, in that she mentioned with interest at her first interview that she had received information "in the mail the other day...from the Open Poly...I might look at that – it's got three free computer training lessons on there ...you get a national certificate in employment skills." At her second interview, she said she had enrolled in another study programme "called Step by Step - through Social Welfare."

This participant's neighbouring behaviours and belonging to supportive networks make her an active contributor to social cohesion in her community, and hint at the larger findings in the study that a relationship between internet use and social cohesion appears to exist under certain conditions. A study of this nature based on a small number of individuals in two case studies cannot determine the precise nature of that relationship, but it echoes the assertion that those who are already socially engaged use the internet to do more of it. As shown in the review of the literature (section 2.3), results in the Toronto Netville studies showed an apparent correlation between internet use and the strengthening of local community. The researchers noted that "those already engaged are increasingly using the internet as an additional tool" (Hampton, 2001, cited in Gaved & Anderson, 2006, p. 19), suggesting that the advantages of the internet may accrue more to those individuals who have effective social networks already. More recent reflections by Barry Wellman of the research team cited above on the role of the internet in contemporary society are that families now function more as networks than as groups, spending less time together than they did in the 1970s, yet they are in more frequent contact via the internet (and cellphones) throughout the day ("Connected lives: The new social network operating system," 2009).

INTERACTION WITH FAMILY AND FRIENDS

Anecdotal findings on this dimension are also presented in section 4.2.2 within the material on networks of mutual support (page 188). There it is clear that, as much as it can be fairly said there was a typical household in the whole participant group in this study, it comprised a large extended family; that the telephone played an important role for people keeping in

touch with family members, for many on a daily basis; and that many respondents talked of their family networks – grandparents, aunts, siblings - being dispersed across a wide area, beyond the immediate vicinity.

Survey questions in the interviews included: Contact with family members - How often do you get together? How often do you speak on the phone? How often do you exchange e-mail? Has using the internet changed the amount of time you spend talking to friends and family on the telephone? Has using the internet changed the amount of time you spend visiting friends and family? Has using the internet changed your feeling of connectedness with friends and family? Findings are relatively uniform across the two cases at Time 1, with roughly half of the participants in Case A and Case B having regular contact with family, more by telephone than in person. In terms of their sense of whether contact and visiting with family and friends had increased or decreased after the arrival of the internet at home, most people in both cases felt that this had remained unchanged, with some exceptions such as those few who felt they were spending more time with their children at the computer.

In Case A, more than half of the group felt more connected now that they had the internet. In Case B, this proportion was one third. Again, a difference between the cases is evident: an implication may be that, if 'feeling more connected' to social networks because of having the internet is about an attitude of confident embrace of the technology, this finding arguably reinforces the sense that Case A was populated more by individuals who were already sociable, and predisposed towards ready acceptance of the internet in their lives. Among individuals, this was expressed as a 'can-do', positive approach – **Participants A3 and A25** being strong examples. This attitude of confidence regarding the internet is seen in their interview transcripts (Appendix 4, pages 268 - 280).

Other individual examples will be useful here for illustrating typical behaviours. **Participant B15** was a high-end user of the internet. He spoke in various places in his interview about how much he and his wife were communicating with others by text, online chat, at gaming sites (with strangers) and via e-mail (with family):

Yeah – because um ... I couldn't believe my brother not um - ringing me up and blowing me up on the phone – ah about a month ago, for not getting in contact with him. I says "look, my e-mail's – ah my computer's lagging – it um it won't go on the internet and it keeps playing up and I've got a toll bar on my phone, I can't ring ya – but I love you anyway, my bro! so ... just - keeping on texting!"
[laughs] But um – we do get – we do talk a lot.

Participant A3 was very family-oriented, classifying many individuals who were not blood relatives as family nonetheless:

As far as I'm concerned the family is we have 'courtesy aunts and uncles' and they are still part of the family...well it's a very old expression. It's someone who is close enough in the family that Mr or Mrs – a title – is inappropriate but so is first name basis due to either age or position and Jacob's godparents they are aunt and uncle because they've got nothing to do with the family but they are his family...We have a very complicated family...hangers on from Nana's family which are aunts and uncles because it is incorrect to call them by their first names. And my Dad's family is in England or Australia... But they are still family and the kids know that these people exist and where they are and they have no concept yet of England and Australia but it is important.

This participant said she communicated most often with her mother who lived in a nearby town, by phone, several times a day “so it's actually a toll call” but this was not regarded as an issue.

By Time 2 when I interviewed **A3** again with her husband **A27**, it became even more apparent that she was highly engaged with her many intersecting networks. I describe elsewhere their careful management of their lives (section 4.1.1, High-connectors), from telephone and television use to the internet, in each case for what the medium had to contribute to the overall wellbeing of the household. As noted above, **A3** was frequently in touch with her family, and the following humorous moment from the second interview demonstrates her husband's insightful response to the interview question (C4, Has using the internet changed your feeling of connectedness with friends and family), as well as the couple's good-humoured relationship. It sums up their values and behaviours while giving some sense of the way family communications worked:

A27: Since the question is feeling rather than actuality, the answer would have to be yes

A3: I'd think it's actually unchanged...

Interviewer: So you think you've always been quite connected to people...

A27: Well she lives with a phone grafted to her ear most of the day.

- ROUTINE DAY TO DAY LIFE

For Forrest and Kearns, social cohesion can be “about getting by and getting on at the more mundane level of everyday life” (2001, p. 2127). They argue that while many other inter-

related dimensions can be identified, and may emphasise dislocation and dysfunction, essentially cohesion exists as much as anything because people simply rise to the challenges in their lives, and they manage. We therefore “may underestimate the importance of the lived experience of the dull routine of everyday life” (Forrest & Kearns, 2001, p. 2127) and thus “the point to note is that it is the neighbourhood which is likely to be the site for many of these mundane routines and for the ongoing ‘repair work’ and ‘normalisation’” (ibid.). A selection of cases illustrating the immense complexity of internet use in everyday life is presented in this section, showing that having a computer and free internet installed at home does not necessarily create straightforward benefits in the ways envisaged by providers. The stories also provide some sense of the ‘fabric’ of the community settings explored in this research, and the way in which some individuals played important roles in the groups simply by getting on with life.

Here I relate some household stories around internet use that illustrate the everyday life aspect of rising to the challenge of ‘getting by’, which on an aggregated level of lived experiences contributes to social cohesion. These stories are drawn from interview narratives and observation over a period of one to two years, or longer, afforded by the qualitative orientation of the study. Aspects of the mundane level of everyday life have the potential to undermine successful engagement with the internet; yet generally, people rose above their daily difficulties. How did different Computers in Homes participants respond to the need for ‘repair work’, and integrate the internet into family life? At times, barriers or a lack of permanency in household arrangements (see 4.1.2, pages 152 - 153) meant it was difficult for parents to establish regular use of the internet, such as occurred for **Participant B12**, who left his partner and children, or family life had altered in some other critical way such as moving to another area (**Participants A10, C26**). For other participants, all I could establish was that they had returned their computer to the school and an explanation was not available (**Participants B14, B19**); yet I would have liked to meet them again. On the other hand, some of the following stories offer a contrast: **Participant A3** and her husband **A27** ultimately began to play a key role in the cohesiveness of the Case A group.

INCREASED CONNECTEDNESS AFTER FAMILY BREAKDOWN

While a household rearrangement can lead to loss of the internet for some, increased internet connectedness can occur for other family members left behind. An example is **Participant B13**, a woman whose partner had left the relationship in the period between Time 1 and Time

2 data collection. At her second interview, a marked change was evident. Before the family break up, she had been working full time as well as doing the housework and caring for the children, and had not had the time to pursue an interest in the internet. Now, while her television viewing had decreased, she was using internet banking on a daily basis to keep track of her finances, exploring hobbies and web surfing every day, searching for information, and reading the newspaper online daily, as well as networking with fellow church members by e-mail. Her demeanour had changed: she conveyed a sense of increased independence and self-reliance brought about by the personal and household management tools available to her through the internet.

DOING THEIR BEST WITH NOT VERY MUCH

Participant B15 has appeared in various places in the chapter so far. He is the unemployed father of six, excited and intrigued by the internet, cheerful, confident and talkative. He talked of learning new skills, discovering “you can get anything you want, really - the world is your oyster”, reading the news online and sending e-mails every day, and learning to ‘type’ (as in using the keyboard). He remarked that overall the internet was

Good – and not so good. It can be addictive and it can also be good for entertainment... Overall it's got to be positive because you know the ways of the times it's all computers, eh – I've got to – we've gotta bring the children up in computers because in the future we're going to be living with computers ... It's the times today and um we've got to take our kids into the future with computers.

On the other hand, when asked if there were other activities he used the internet for that were not listed in the interview schedule, he said

Sex! *[laughter]* My cousin told me about this sex site and had a look at it and... couldn't believe it! Well he actually just comes in - “look at this, cuz!” – Look!!!” *[Laughter]* So you know – it's ... like - a guy thing, you know when all the bro's get together and ... well, yeah –and it's not something ... much, but we'll have a look.

It was likely he wasn't aware that this would not be viewed favourably by either the school or Computers in Homes. However speaking of the sense of accomplishment, of self-esteem he feels at now being part of the online population, **B15** explained

Well that's what we do when like all the guys get together – before when we didn't even have a computer, these guys were talking about megabytes, RAM, and I'm sitting there and I'm going “well this is getting boring!” – you know? I don't know what they're talking about – I've got no communication with them – um, when we all the fullas get together and they're all like ... and I'd just

think – “gee, guys, man you fullas sound like you’re a bunch of nerds! You know, cos I ring you up, and you’re on the computer, I can’t get a phone call to you because you’re online, you know and I leave the message, eh, ‘hey ya nerd! Get off the line! So I can talk to ya!’” Yeah but since I’ve been on the computer and now these people start talking about these RAMs and gigabytes and ... I’m in there! Yeah I know what you talking about bro! So, yeah...

I observed in my field notes after interviewing **B15** that he “really thought about every single item I asked him... despite having six children and two kittens milling around – it was quite chaotic.” His wife appeared halfway through the interview and made comments on some of the questions. The children seemed largely unsupervised or at least the oldest one who was seven or eight years old appeared to be in charge of all the others, organising the little ones at the table for breakfast about mid-morning. More observations from the field notes:

The house that they live in looks quite newish, and as I walked up to the house, the garage door was open and it was – I think – fitted out with lots of couches and mattresses and what have you and it looked as though it was pretty much a communal bedroom for the children; there was also a cot, a baby’s cot in the lounge, so possibly not a very big house and they’re having to make use of all the available space – but quite new and a bit of a garden, lawn area outside the lounge, with a big tree for shade and a bit of play equipment – a slide and swing for the children. The computer was set up on a sort of a card table in the dining area just off the kitchen; they also had a Playstation, and a big TV and video... reasonable living circumstances but basic and probably not a lot of money to go around – reportedly earning less than \$10k a year. B15 told me on the way out to the car that they pay \$80 rent – and that previously in Papatoetoe in the place that was really cold and was causing their children to have ill-health they were paying \$280 a week. So I don’t know how they could possibly have managed and how they even manage now.

This participant subsequently dropped out of Computers in Homes for reasons I did not ascertain, so this interview was my only opportunity to meet the family. As with **B14** and **B19**, I would have liked to meet him again at Time 2.

DISCONNECTED, BUT NOT BY CHOICE

In a cosy, carefully-tended home, **Participant A9** was evidently very happy there and had lived in it for 12 years:

That’s why I chose to be here I like the view of the water, you don’t see much of it now, but out there, I used to see the whole of it... the trees have blocked a lot of it now but um, that’s something that really attracted me to the area... I’ve got really good neighbours... originally when I first came in, there were

only me and the lady next door living here on this street. We were the first ones... within these streets, well the houses closest to me I would know all their names...

A9 walked wherever she needed to go “and if there’s more than I can carry in two hands I’ll taxi home”, a way of life that seems to increase her social networking. She talked, for example, of bumping into people, or calling in to see them, on her various walks home:

Usually though when I’m walking home from course, I do, I call into a girl who lives up towards the school, used to be on course with me, and I just call in to see how she is and what she’s up to. Has she got a job yet or...

A9’s day-to-day life calls to mind the descriptions of neighbourhood in chapter 2, where it was defined by Kearns and Parkinson as an area within 5 – 10 minutes walk of one’s home, and where Joanne Jacobs’s (1961) definition of neighbouring was recalled as the “eyes on the street”.

A9 had felt she must return the computer to the school not long before the second interview, because the son who entitled the family to receive the Computers in Homes computer was now no longer living with her. An older son had also left home; the only remaining dependent was a pre-schooler. Losing the computer was clearly a matter of some regret for her because she could not afford to buy one herself. At Time 1 she had said in regard to the internet, “I’d probably miss it quite a lot”, so it was unfortunate that she became ineligible for a computer once her primary school child moved “up North” given that her internet use had increased markedly. Her teenage son was an avid user also. She described the way she had to fit in her own time on the internet:

Well my time is when the kids go to sleep, that’s the only time I don’t have to be fighting for it, so I probably, um probably up to two hours, generally, most nights, yeah, when I first got it I was sitting there for a long time but I’ve found I was getting too tired and um, had to stop that one. Generally it’s from 11 o’clock...[at night]

By Time 2 she estimated that while she still had the computer she was using the internet more frequently for more tasks, spending more time online and on e-mail. Her ICI rating increased over the year of use. Being a mentor to other Computers in Homes parents had proved to be somewhat frustrating with one of her mentees:

I’ll have to give him a ring again and see if he actually is connected up properly, so he’s wasted a whole lot of time...not doing...I don’t know if it was lack of communication, I don’t think so because I’ve been to his house, I’ve asked him, I’ve rung him on a weekly thing, asked him if everything was

going alright, and then he rings me up and tells me he's got this bill for xtra, I'm going like.....
ok.....trying to sort it out.... And I am not sure whether that was because I'm a woman and he's got a
thing about women telling him what to door he just....went and does what he wanted..... I mean I
really don't know where he was coming from...

Altogether, internet access was a positive experience for **A9** but the opportunity it represented had fizzled out. Internet use had been integrated into her everyday family life in such a way that her offline and online networks and capabilities were complementary, and she was actively contributing to social cohesion in her neighbourhood through her interactions with others on a daily basis, and through Computers in Homes mentoring.

“I TRY AND HIDE SOMETIMES - I JUST TURN THE INTERNET ON”

Aged in her mid 40s, Participant **A25** was more or less confined to the home as sole caregiver for her elderly, frail father. A talkative interviewee with much to say about her family and neighbourhood networks, **A25** in many respects appeared to be a central figure in both, with her home being the site of much coming and going of young family members in particular (infant grandchildren, children and teenagers) at the time of both interviews. The transcript of one of her interviews is appended to the thesis as an insight into the nature of her life and household, the confluence of family networks, and the way internet use fitted into the dynamics of family life. I sensed some ambivalence in her feelings towards using the internet, despite her comments cited earlier in the section on high-connectors (section 4.1.1, page 143) where she refers to the fact that having the internet keeps her at home. She remarked that if the internet suddenly vanished from her home “I’d miss it but hey life goes on, you can do without it. I would probably just turn around and take off outside and go shopping or – have more time out sort of thing rather than just sitting here.” To a large extent, internet access appears to fulfil a role as escape from the mundane level of everyday life for her: “I try and hide sometimes – I just turn the internet on.”

By Time 2, **A25** described her life (refer Appendix 3, pages 276 - 281) in chat rooms at considerable length. She was going online frequently at the local library (two or three times a week) as well as at home, but her reasons for being so connected had changed. For example, her use of e-mail - though still a daily activity - had declined both in the amount of time spent and the number of e-mails sent in an average day. E-mailing friends had dropped from ‘every day’ to ‘very little’. By her own admission she was now spending hours observing but not participating in chat room interactions, staying up late at night and sleeping during the

day to do so. Television viewing, spending time with friends, talking on the phone and visiting friends and family all now occupied less time.

Ironically, while her narrative and my observation showed her to be at the centre of a good deal of social interaction arising from family and school life, she very much liked to retreat also, such as by not answering the phone or leaving the internet on so that the phone would not ring, and the online environment may have given her some sense of shelter and validation: “I think it makes people listen to me it’s - no one else round here seems to! *[laughs]*” The following passage from her interview captures the significance of the internet in her everyday life:

You know like I’ve said sometimes days are boring, or - my days are all flipping boring if you ask me but *[laughs]* you know there’s always something to do, but it’s just like, when I have absolutely nothing and it’s so quiet like, my partner goes away all day and it’s like ... work’s done and it’s like, OK you can get onto that *[the internet]* before you realise it it’s time to go and pick the kids up and you know in another way it’s an interference, in my life, as well as it’s a – ah – it’s good for your life sort of thing – it keeps me communicating and specially when I’m just sitting here and there’s nobody else to communicate other than *[nods towards her elderly father’s bedroom]* in there, so...

A25 has much to deal with in rising to the challenges of her everyday life. She manages to do so in a variety of ways, in particular by creating a household that is a hub of family activity. In this sense her way of life assists with the processes of social cohesion within her family and neighbourhood networks. However her interviews reveal a slightly sorrowful, ambivalent attitude both to her predicament, having no option but to be at home caring for a loved parent, and to enjoying the internet but being aware that it is a place she goes to hide. Her stream of good cheer and jokes directed at herself seemed to be a way to put a positive gloss on things.

BUSINESS GOALS FOR INTERNET USE

On the day of her first interview (12 November 2003) I recorded in my field notes that **Participant A3** was explicit about her intention to make use of the family’s internet connection to help them start up a business from home, and this was the primary goal, rather than family literacy as such. She said

Today, right at this moment I would say I was a caregiver, but that's likely to change with the business plans.

The priority use for e-mail in the family would be for business reasons; their use of a cell phone was "basically... for contact for business." However she explained when I asked about whom she mainly contacted with her e-mails (interview question B9) that while at this early stage of internet use she had been struggling to learn some of the basics,

...the big document I sent off today was to a business adviser and I've got contact with the school. If you are talking about volume, like the amount, how many times am I contacting friends or family, quite a bit, but I have really been trying out for this. It's like this has all been trials and if I did this, what is going to happen, but this was the main event I was training for...not that I want to work at 1 o'clock in the morning any more ...yeah I am so busy, just sitting down in the middle of the night ...with a cup of tea...that's almost the only 'me' time.

The gist of her comments was that e-mailing family and friends was much less of a priority than the business plan which she had been staying up late at night to complete in the quiet hours – this was "the main event." And "I've definitely put in a lot of time in that back room, lately." Her social e-mails had been more for practice. By the second interview, her e-mailing had become more associated with family contact. Other applications had become associated with the business side of the household:

When a huge amount of bills hit me I do need to access the bank's information and then I'll need to – switch it off and come away and think "what are we going to do - shuffle money around?" and then I go back and shuffle money around!

Participant A3 stands out from almost all others in the study for her highly determined use of the opportunity provided in the form of the free home internet access, to give her family the best economic boost she possibly could. By this means she optimises their chances of going beyond the limitations of their current milieu. On the other hand, she was also a very involved parent during the period when, at Case A, the new school was being built directly over the road from her house. She anticipated her children would be going there rather than the older school premises a few streets away, and was involved in meetings she described as a "Discussion Quorum" about the school being split into two (refer section 3.2.1, pages 96 - 99). I observed her speaking with school and Housing NZ staff in an "I expect answers" kind of way: not at all shy or retiring. As later events transpired at Case A, **Participant A3** became a key person in the longevity of the scheme, taking responsibility for Computers in Homes at the new school site, working with others to ensure unused computers were being collected and

upgraded. The Computers in Homes national coordinator informed me in 2008 that these parents organised training for new parents at Case A and generally ensured that Computers in Homes impetus was not lost. **Participant A3** can be characterised as not only making active use of her family's Computers in Homes internet access to manage own life, but also in her daily life playing a strong role in the community for her determination to see that the Computers in Homes scheme continued. Her daily whirlwind of activity in and around the neighbourhood and school made her a natural leader and linchpin in community networks.

ONLINE HEALTH SUPPORT GROUP

Participant A6 had a very sick child who suffered a rare medical disorder. This had become such a focus of attention and time that, she told me, the internet became less of a priority over time, even though in the early days of having access she had found it an invaluable resource for information and support from parents around the world, with children similarly afflicted.

A6 e-mailed me:

To: Jocelyn Williams
Subject: Fwd: Re: Computers in Homes research

>>> "Airi Waipour" <airiwaipour.cih@actrix.co.nz> 20/12/2003 13:28:31 >>>
Kia Ora Jocelyn
Thank-you for your e-mail, it was nice to have the chance to meet you also. I always find it a pleasure to meet and talk with different ones as yourself and as I mentioned to you I am new to Auckland so that was great to have you come to my home. The computer has come in so handy in my home with the children using it for games, homework etc, but for me it has come in handy for me as I have a daughter who was diagnosed with a rare sickness at the very early age of 13 months, she is now 9 1/2 and has been in remission for 3 years, though we still have our ups and downs and now has begun having seizures which is very new to us, but as for the computer it has been useful in the way of research and finding out more about her sickness and also finding different networks, other parents from all over the world and just here in little New Zealand who are going through similar things and are finding it really awesome to be able to relate to others who are going through the same as me. So with that I too would like to say have a very merry xmas and a wonderful happy new year. I know there are lots of good things in store for each and everyone of us next year. Once again thank-you for your e-mail and do keep them coming. May God Bless you and your family.

Ka Kite
A

Like Participant **A25**, this participant appears to be one of the success stories also cited by Computers in Homes on the website in a section titled Health Information and Combating Isolation: "Parents of a child with a rare disease spent much family time back and forth to Middlemore Hospital and did not know of anyone else in NZ with their daughter's condition. Once they became Computers in Homes family and had access to internet at home, they did a search on the syndrome and found much more information plus an international Parents' Support Group" ("Computers in Homes ", 2007, Achievements and Benefits of Computers in

Homes section). In this sense, for this participant, at the level of everyday life her online networks were providing her with greater social connectedness and support.

THE COUPLE WHO “PAY IT FORWARD”

Participant A4 and his wife **Participant A5** were very focused on helping others, such as being active in the local residents’ group. With three young children and a wide range of community activity, they were a very busy family. Yet he said he would miss the internet ‘quite a lot’ compared with ‘a little’ a year previously, and by the end of the study the couple had purchased their own computer. **A4’s** estimation of its importance in the family was likely to be coloured by the fact that the couple’s three children appeared to make extensive use of it, and he was happy with that outcome: it was what they had wanted. Both **A4** and **A5** were clearly intent on maximising their children’s educational achievement. Despite an avid interest in the children’s education, in Computers in Homes and in mentoring other Computers in Homes parents, **Participant A4** was using the internet less by Time 2. Most of his internet activities declined in frequency, and his goal scope had diminished, with fewer, less social internet goals growing in importance.

At our second meeting for a follow up interview in November 2004, the couple sat together with me to talk about their internet use and involvement in the community. **Participant A5** talked of how busy she was and that she had yet another meeting that night and how stretched she felt with so many commitments. “Lucky I cancelled a course tonight, I told you, otherwise I don’t know how am I going to do all these....” That evening’s meeting was a Housing NZ initiative, a group that met every fortnight, discussing “how we can improve this area” (**A5**) and “making it more secure” (**A4**). The couple spoke together, as they had at the first interview a year prior, often finishing one another’s sentences. The following script will give a sense of the shared discussion about the meeting they were to attend that night. Note that it is equally relevant as evidence for social solidarity, one of the group level outcomes of social cohesion reported on in section 4.2.2 (page 194):

A5: We are discussing um... this area how we can improve it

A4: Because we’re really involved – we try and get involved in the community ...Habitat...Housing NZ and...

A5: So there’s a meeting tonight...every fortnight, to improve this ah –

A4: You know the neighbourhood, the area, you know making it more secure

A5: And how we can ah - trying to let the community know where to go for help, and you know where to ask. It's very sad to see that they don't really respect the ... but it's benefit for everybody...that's just what it is, not just one person, it's for the whole – people that...

Interviewer: What sort of problems do you want to address?

A5: Ah well like ah -

A4: Oh mainly the vandalism basically -

A5: - robbery -

A4: - the neighbourhood, the area the rubbish and that - anything that can beautify the neighbourhood basically

A5: And what kind of ah – which area that they need a playground for the children, things like that

A4: It's good because the council are also involved in this – cos everyone - HNZ, the Council, and all that...

A5: So that's another thing they are trying to bring – to draw people in – to involve – it's not just one or two or three – it's everybody – any way that will get the message – to come to meetings – we want them to be there, we want to hear their voice – cos everyone - you can't tell other people what they want...

Interviewer: Do you think that the Computers in Homes helped in any way to bring the community together?

A4: yeah, in some ways it does, yeah

Interviewer: In what way?

A4: Generally, like ah – meeting people you'd never get to meet, through training, and correspondence type of thing – try and keep in touch with them

A5: Because we have to have a meeting, we're trying to have a meeting like every three months

A4: She's *[indicating his wife, P5]* the coordinator, because T---'s not doing it any more – so she's more or less the school liaison between her, M-----, and S--'s *[P3]* the one for Te Matauranga.

A5: Anything that comes from HNZ in Wellington will come straight to us...

The values and everyday life of this couple exemplify the reciprocity principle of "pay it forward", an expression from the 2000 movie of the same name, and generally denoting the concept of asking that a good turn be repaid by having it done to others instead. According to later reports from the Computers in Homes coordinator (D. Das, personal communication, 23 November 2008), their involvement in Computers in Homes coordination and leadership of training for others was ongoing. The values and actions demonstrated by this couple are a good illustration of how the dimensions of social cohesion, which emphasise "a shared sense of morality and common purpose; aspects of social control and social order; the threat to social solidarity of income and wealth inequalities between people, groups and places; the level of social interaction within communities or families; and a sense of belonging to place" (Forrest & Kearns, 2001, p. 2128), can be embodied at a personal level.

Much of what the couple was saying about their neighbourhood is levelled at the need to create the outcomes stated above, and express what Kearns and Forrest (2000) elsewhere identify as important: "that individuals and families should feel that they have a place and a stake in the social system; that there is interdependence; that they are all part of a social project from which they will all share benefits" (p. 998). **Participants A4** and **A5** understand these principles of reciprocity at an intuitive level. Their active involvement in Computers in Homes (he, as a busy and always available mentor to other parents; she, as Project Champion at one of the Case A schools from 2005) is a way for them to 'pay forward' their knowledge of internet use to other families and by this means to assist in the processes of building social cohesion. It is clear in their interview transcript that they wish to enact a positive role in their community in these ways, as part of their daily life and values.

- INCLUSION

The next dimension of individual-level social cohesion is behaviour associated with inclusion and acceptance of diversity. Wide variations were found in terms of interviewees' sense of how they felt about living in their neighbourhood. **Participant A9** remarks: "I've met a lot of people actually, within the area. I think they offer a lot of things, for single mums and like with the training courses and like now that I've reached the network and see what they actually do within the community." **Participant A3**, introduced previously as someone who didn't seem to fit the typical Computers in Homes family profile for her already apparent ability to make use of the computer and internet and her determination to use it as a tool for a home business, had interesting observations to make about the Case A district. A fairly long-term resident of more than 12 years, she reflected that things were different in the area in their early years –

when they moved to their older farmhouse it was in the fields with a sea view. Her comments implied a type of proprietorial attitude – that this was her neighbourhood. A process of suburbanisation had changed her neighbourhood.

It's not as bad as it was when the gang headquarters were literally down the road. I still consider this Weymouth because this is Weymouth to all my...When we moved here it was Clendon Park but in the last five years Clendon Park has been very centralised around the um, the shopping centre, yeah that one over there has become Clendon Park. Whereas this originally was. And Weymouth was sort of a seaside settlement – the sea's only out there! Before the houses went up you could look out at the estuary and we get salt burn still on the leaves of plants.

She felt that, having been a proud resident originally, there had been a process of change so that

Ah - all of a sudden, and others are not proud...I mean OK our house is not exactly houseproud inside, it's a terrible state of flux with moving people around and renovations. But the graffiti and the rubbish... and it can get to you after a while. And I came **from** the country and I came **to** the country, big paddocks, and then all of a sudden – people!

In a sense **Participant A3** appears to have felt displaced by new residents, and to a degree still held those feelings. In commenting on the statement in interview question A4, 'I enjoy meeting and talking with my neighbours', she said

Yes I do, yes I agree – but I don't like being in their pocket. Nor the other way.

As new houses began to appear around their old farmhouse eight years prior to the interview, there had been a sense of togetherness:

Eight years ago – different story. Less pressure, building community - everyone was new, so that everyone made an effort to know everyone, but [now] it seems more like cliques. And I came from the country and they're crowding me! (Laugh).

A slight sense of displacement here suggests the inference in Bourdieu's notion of habitus that those few individuals who do step outside of larger social reproduction processes, like himself, may feel estranged. **Participant A3** came to what was a suburban idyll by the sea, enjoying the gentler, more cohesive habitus; now, the neighbourhood, its values and norms seem to her to be changing, and she is less comfortable. She exhibits aspiration and determination to be upwardly mobile.

On the other hand, **Participant A25** felt very comfortable with the diversity around her and saw it as a bonus:

A25: You know but its cool, it's ... just like...

Interviewer: A big family?

A25: Yeah! And this old lady down here everybody calls her Aunty Joy, so... *[laughs]* and...you'd be surprised! And – it's multicultural – it's um like I've got single guys on either side of me – you know he's a teacher and this one here's an unemployed bum, but....

Interviewer: So it's a real mixture?

A25: Yeah! ...bonding, we care about each other, you know like we watch each other's houses, um ... we know if anything's wrong, and ... yeah, it's like that. The shop – you know there's a dairy, we know the dairy; it's like ... you know where to get good meat, or where to get this, you know – to go on, what fish and chips, takeaways – you know, go down the other one! So yeah it's um central... It's got schools, it's ...everybody ...you know it's multicultural, it's like ...it's also teaching me to not ... *[?]* so much ...*[?]* my child to accept every culture, and Gawd would you believe not one of his friends is Maori! *[Guffaw]* Yep! That's for real he's got Fijian, he's got this Samoan, he's got these full Samoans, he's got Rarotongan and I'm going 'Hello!!' *[big laugh]* 'Hello!' and then he comes home to his uncles and they're all Maoris and that's when it does *[???can't hear this]*. You know? He's really intermingled...

Interviewer: You quite like that diversity?

A25: Yeah – I love it, you know – like I said we don't look anyone down you know our house is always open, our doors are always open.

Participant A25's commentary exemplifies Meegan and Mitchell's (2001) characterisation of the neighbourhood in which "people know by sight most of those who live there and ...know all the significant buildings and central focus of the area – shops, schools, libraries..." (p. 2172).

In contrast, **Participant B16** had mixed feelings about his area:

I do and I don't – because um... I don't know – these ones around here are all right and um, there's just - oh the lady at the back I don't sort of get on with. Yeah she has – she's got a few kids and they're always running around til late at night and – you know, that sort of thing? Yeah and so ...yeah – no the other neighbours are all right except *[for her]* – I don't want to be nasty or anything. I might have just contradicted myself there but... I don't know, no yeah – certain neighbours, you can get on with and others you don't.

On the basis of survey questions about neighbourhood relationships, visiting and phoning people, aspects that are assessable with closed-ended questions, at Time 1, a high proportion of the nine Case A respondents (seven and eight of the nine) expressed positive or strongly positive attitudes about knowing, talking to and being friendly with neighbours. In Case B, the proportions were smaller: around one half (6/13, 7/13) reported positive or strongly positive feelings. There were mixed results in regard to visiting and phoning people, with half of the Case B respondents saying they had visited someone in the last day or so and over half of them had phoned someone, while one third visited and over half phoned someone in Case A. On the numerical basis, then, evidence of positive neighbourly attitudes was arguably more apparent in Case A even at the beginning; in contrast, there appeared to be more insularity at Case B, an example being **B24** who preferred to approach only people of his own ethnicity if he needed assistance, and his most active network was a dispersed, culturally related community group.

- SUPPORT

Households I visited generally seemed to be very much integrated with their neighbourhoods and research participants felt support was available.

Taking a lead from Kraut and colleagues (Kraut, et al., 1998) in their HomeNet trials - referred to as the Internet Paradox studies for the apparent effect of increased isolation and reduced psychological wellbeing among participants (refer to section 2.3, page 67) - I also used questions from Bendig (1962) on trust and life satisfaction in my study (question C7 in the interview schedule, page 268). Results show that trust and life satisfaction were rated more highly at Case A. Six of nine Case A respondents at Time 1 reported they agreed or strongly agreed with the statement 'most people are honest', while at Case B, five of twelve reported they agreed or strongly agreed. Eight out of nine agreed or strongly agreed at Case A that 'I am very satisfied with the way things are going in my life these days', and seven out of twelve at Case B.

Participant A25 emphasised several times throughout both interviews her sense of comfort in living in the Case A neighbourhood:

It makes me feel comfortable; it's like my hometown; you're not criticised – um, people don't look at you – you know you're not looked up and down; um – actually I think actually I may tend to do the opposite to them – you know, just a little bit, but it only pisses me off sometimes because I see kids roaming the streets and, you know, and you know that parents just aren't home or watching them and that? But um other than that – no, love it.

A25 gave examples of ways in which her neighbourhood was inclusive and actively supportive:

We help this one here *[indicating a neighbour]* – we help him constantly, he's always moving stuff. So you know it's like you know any time – they cook feeds, they cook my father meals, and honestly eh the meals that come from her – hohhh *[indrawn breath indicating how impressive]* – ohhh, they're just so fantastic – they're a huge plate I mean Dad's is only a small portion, but because they're Islanders they – that's their way of showing appreciation for him – yeah so there you go you know it's like that, it's "Wahoo!" when they come over! *[laughs]*

By contrast **Participant B18**, despite having lived in her area for years – “we’ve moved in this street ourselves three times!” - seemed rather vague about the people around her:

I mean I know other people up the other end of the street but not sort of around here. Because the lady that lives behind there well she works and you don't see her very often she sort of keeps to herself. Um, yeah there's a lot of people, elderly people that sort of keep to themselves sort of thing. When they're outside if you're walking by well yeah you say hello. You know it's the right thing to do but names...nah not a clue.

However, **B18's** mother lives “lives down past the school so I'd probably go to her” so there is a sense of being comfortable and safe with the neighbourhood: “I'm sort of the shy one but once I sort of get in there I'm fine with people. But, um, yeah, they're quite a good bunch around here. Yeah. You talk to them and they sort of watch your property when you're not here which is good.” Additionally, “I also know other people at the other end of the street so if we were really desperate they would help us and we would help them.” This woman and her husband clearly needed to feel this sense of ready support because they had a child with a rare medical disorder:

My husband well I only wanted two and we ended up having three and then our last one was sort of born, um, with a few problems and that, ah, and it's been really hard. I mean sometimes, I mean I love her to death but sometimes I think if I'd just stopped life might have been a little easier. But I wouldn't give her up for anything... and with the little one we sort of went through a bad patch with her... she's got a depletion of chromosome eight and it's very rare. They've found one other reported case in the whole world. And they can't give us much information about it at all so it's really hard to cope with because we don't know what her outcome is going to be... she's only six but yeah sometimes she can be out of control. ... um she goes away to ... care you know for weekends just to give us a break... a couple of times at school she's had fits as well. Um, and we've sort of had to take her straight to hospital every time... but you know it's, you sort of want to be close by if something does happen and that also why we have the cell phones.

This family's situation would potentially have been improved by having the internet but they had been plagued by technical issues with their computer.

Participant B15, the high-connector unemployed father of six, was almost distrustful in his feelings about the neighbours:

I would love to know my neighbours – I would really love to know my neighbours – um I also like to get along with them – but ... sometimes they can bring their worst out and slap it on your – slap it on your doorstep, just by meeting – just by being yourself and letting them come in – before you know it they ... they all helping themselves in your cupboards. So, yes and no, really – I'd love to know my neighbours yes, but not to the extent where they've got to know me deep inside – I wouldn't like to know their – sometimes we just like to close the door and not let anyone else know that I'm yelling at the kids!

Further, he was very clear that he would never ask neighbours for help: "Oh no, my pride's too big, I'd never ask. I wouldn't even – I don't even – even if my family and I were starving, I wouldn't ask them for food." This characteristic is said to be typical of the information poor who tend to be somewhat unwilling to seek help from others (Chatman, 1996).

However in a manner reminiscent again of Jane Jacobs's "eyes on the street" metaphor about secure urban life (1961, cited in Wellman, 2009), **B15** seems to have a proprietorial view, watching over things in his neighbourhood:

I actually told one of the neighbours off because his dog attacked one of the little kids on the bike and the parents were happy that there was someone watching the kids in the street. You know because all I did was go down the letterbox and have a look and this dog pulled this baby off the bike, shook his head while the baby's bum was in his mouth and I just couldn't believe it I was still standing there going "is that what the dog did? Did the dog...?" Cos it happened in a split of a second....four seconds, it was finished. I carried on, rang up the dog pound and went over to see if the baby was all right first – the baby was OK then I went to the owner of the dog, and... yeah, no we get along...I see fullas doing graffiti on the walls, and um I've made them go down the neighbours here, scrub their letterbox, scrub my letterbox, scrub my fence til it's clean. And I says "If I – if I – how would you like me to come down to your house and draw all over your letterbox, and all over your wall?".... They cleaned it up – they were really young boys – they were like um – nine? I couldn't believe it you know – I was out there doing it when I was seventeen, sixteen....

Survey questions were useful in complementing the interview data. These were included in the interviews to assess aspects of participants' local support and neighbourhood contacts, such as how many neighbours they would ask for help in certain circumstances. Across the whole group, people were sufficiently familiar with their neighbours to know their names and say hello. Sixteen of the 26 respondents to question 5, "How many people do you know by name

and say hello to in this immediate neighbourhood?” knew at least five neighbours by name, with the average being more than nine. In Case A, the average number of neighbours people said they knew by name was 16, whereas in Case B, the average was six. On average, Case A participants reported higher numbers of neighbours they would be happy to approach if they needed someone to watch over their house, needed a ride, someone to talk to or to help with repairs.

- PLACE ATTACHMENT AND IDENTITY

A final dimension of individual level social cohesion is place attachment and identity seen in “strong attachment to place; intertwining of personal and place identity” (Forrest & Kearns, 2001, p. 2129). Data on “belonging” from section A in the interview schedule show the majority of the whole group of 26 participants at Time 1 were interested in knowing their neighbours, and enjoyed meeting and making friends with them. The majority (17 of 26) agreed or strongly agreed that they were interested in knowing their neighbours, while just two participants disagreed. Similar results were found for responses to the statements “I enjoy meeting and talking with my neighbours” (18 of 26 agreed or strongly agreed, while two disagreed), and “It’s easy to become friends with my neighbours” (17 of 26 agreed or strongly agreed, while three disagreed), indicating a positive attitude to neighbourly relations. Yet their responses to questions concerning the number of neighbours they would feel comfortable asking for help indicate that most people feel unwilling to ask any neighbours, or only one or two: again, a reflection of Chatman’s (1996) characteristics of information poverty.

There are exceptions such as **Participant A1**, also a high-connector who knew eight neighbours by name and to say hello to, while in reference to another neighbour she remarked “I don’t know his name but I still talk to him” and “I’ve had one of the neighbours fixing things quite often”. On the other hand she felt “I don’t know what’s happening in the community” but in terms of the people she communicated with most often, “it’s usually my cousins”, by phone, e-mail and visiting. **A1** showed a feeling of commitment to the area because of her children: “I won’t leave until my kids are finished school here...” **Participant A9** had lived in her house for twelve years, was clearly fond of her neighbourhood, and had a strong sense of identification with it. She knew many neighbours:

That’s 11, I mean I know a lot of people, but funny enough a lot of people know me through some of my sons, like I know them at school, I see them around at my son’s school and they go “oh you’re Robert’s Mum aren’t you” and I go “yes”. Yeah, so it’s more.....but within these street, well the houses closest to me I would know all their names.

Participant A25 expressed a neighbourly feeling, saying: “we care about each other ... you know the more I meet people here the more I stay here”; **Participant A1** stated “I get on good with all my neighbours, I’m usually outside yakking to them half the day, you get nothing done...”; while **Participant A9** said “I’m quite a sociable person, I’ve met a lot of people actually, within the area ... I know a lot of people”. **Participant A4** not only knew his neighbours but “... I help them as much as I can here and there”. Of the 25 respondents to question 7, “How likely is it that you will leave this area in the near future (i.e. next one to two years)?” the majority, 16, were unlikely or extremely unlikely to leave the neighbourhood.

Case B families were more likely to rent rather than own their home (10:3) but there was little difference between the cases in terms of pride in living there (which was high) and interest in knowing neighbours (which was as positive as at Case A). Yet some variation is evident in terms of neighbourly feeling. Rarotongan **Participant B24** commented of his neighbours “you know I just mind my own business but if they come that’s OK” and his explanation “because all these are ... they’re all Maori, I’m Cook Island – the only Cook Islander” and “...I always ask that Cook Island fellow lives over there” if he needed help, point to a tendency to prefer one’s own cultural group. This aspect was quite marked in this participant’s responses, for example he regularly travelled some distance to remain actively involved in his Cook Island church community activities: “I have my own community, my Cook Island community ... when they call a meeting like a - like a meeting over there, I go”. Discussing aspects of what is relevant to his idea of community is “not with my neighbours but at church I do – with my Cook Island group, we discuss a lot”. So to an extent **B24** demonstrates some insularity in relation to cultural identity, while regular interaction with close family adds to his supportive networks: “Called my sister yesterday, phoned my kids in Australia.” **B24** was clearly a busy user of the telephone - “speaking on the phone with your family?Oh yeah my wife and myself we sometimes every night or whatever...probably every week - every day” - and had active social networks:

We have actually set aside two days in the year when we all come together, that’s Easter and Christmas. And well beside that we have meeting like next Saturday I call a meeting when we come together and talk in Mangere and then Easter Monday there’s a wedding of a family one of my nieces so we all ah ... February 28 we had a big do for my mother turned 90, in Mangere – all these, oh we come together quite often.

Thus cultural identity was more important than neighbourhood for **B24**, for whom community is dispersed:

...our community ah hall. Because we bought it for the community, because we come from the Cook Islands and ah ... each community you know buys their own hall and ah people come together as different Island groups. So we always have what's like – when was it ah – Monday Tuesday night we went over there, there was a funeral, two people passed away, so we always come together.

In this sense, **B24** contributes to cohesion of a more geographically dispersed group than the Computers in Homes community group.

Taking the participant group of parents as a whole, although they were somewhat transient (see 4.1.2, page 152 - 153) and tended to travel outside of the community on a daily basis, they showed proud attachment to their communities and a positive inclination towards the idea of relationships with neighbours, if less willingness to actually ask them for assistance, preferring instead to turn to family or church. Signs of cohesion appeared to exist in the case study groups already, evident in neighbourly chat ('over the fence' camaraderie), an intention to stay in the area, a tendency to affiliate with churches, and overall pride in being a part of the community.

As has become evident in the results set out in this chapter, Case A more than Case B was distinguished by the characteristics of a more cohesive community with a few individual parents at the school who showed behaviours and attitudes associated with civic engagement and a clear awareness of the process of collective action. One in particular, **Participant A3**, also possessed an understanding, from both a Computers in Homes internet user's perspective as well as an educated layperson's sense, of how a scheme like Computers in Homes could be improved, and this perspective combined with her other qualities of willingness to commit to shared tasks led to very positive developments for Computers in Homes at this site. **Participant A3** was someone well-used to volunteering, and this was seen in both her interviews. At Time 2:

Interviewer: S--, from what I've heard and what I've seen, you are a person who does volunteer to do all sorts of things...

A3: Yes, ask me where I am tomorrow! At the school!

Interviewer: So most of your volunteering would be associated with the school, would it?

Husband: Yes she's got this physical disability that makes her arm jump up in the air when they're looking for a volunteer

Interviewer: How often, once or twice a week..?

A3: Yeah at present it is...I would say absolutely, once a week I would do something for either school or kindy, which to me is schooling

It may be that community action arising out of social cohesion requires someone like this taking a leadership role. **A3** goes on to tell of one of her commitments (of many):

You see there's something happening at the school at the moment that actually involves the community, that being that we want to re-capitate the school to year 8 – now is that actually school, or is that community?...because I asked, it was my letter that instigated this, up to year 8, because we were originally told the school would go to year 8...

For her, these issues are somehow about 'community' rather than a single institution:

...dealing with that, going through, through the school, the school support, this is now the next step that has to happen – but I feel because it was my letter, I've requested the principal, it was my letter that started this process and I need to be a little bit more hands on. And the same with Computers in Homes – that's not actually a school project that's a community project.

We may infer from the thoughts **A3** is expressing here that she is motivated by commitment to the diffuse 'community', a generalised sense of a public good, rather than seeing civic engagement as defined by particular isolated causes and their outcomes. Having got to know her, it seems to me that **A3**, being involved in numerous ways in her community from Computers in Homes to kindergarten to the school restructure and a number of related issues, is someone who simply believes it vital that some people step forward in life to take leadership roles.

A3 went on to talk in this second interview about her motivation for taking an active role in rescuing Computers in Homes at Case A:

...and that's why F—[another parent, A5] and I in particular feel up high and dry – and that's why I don't feel that this present intake has quite got enough out of [Computers in Homes] and if they're talking about a new intake I want to be involved in making it smoother running – and the process and the support behind is there, because our family, I've had a reasonable amount of computer information and I was happy to ask questions, but there are still families out there who don't have internet access...

A3's interview transcripts offer numerous insights into her views and concerns about the way her community has changed over the twelve year period she has lived there, her willingness to commit to action, her commitment to the area's identity and prosperity. She showed a strong

desire in her second interview to create change in the way Computers in Homes is delivered in future. Reflecting on her own experience, she felt disappointed.

A3: It was just too rushed – “Do, do, do, do... This is the computer.” And I had the ability to use the computer – the manual is a waste of time. I had trouble reading it!

Interviewer: Is this the one on the website?

A3: Yep. Ah – no the one that came with the computer, about what the computer held for us. When it came to ... my 5 minutes on the internet, as to ‘this is how I want to set up the internet’ - this is what you use the internet for – it was “Bler – bler – bler – bler” – and I’d **never** used an internet connection...

Interviewer: So even though you think of yourself as pretty capable, you felt that the training was...

A3: ...inadequate. And I’m not the only person that thinks that – T---- who was the school force behind it also feels that way. She wants the families to be able to – “OK, this is what we are going to do” - like a lesson plan – “This is what we are going to learn today and we are **all** going to learn it.” Yeah just a bit more support and when we left the room with the computers, we were just ‘airily-fairily’ told that “Oh Actrix has your [e-mail] address, you’ll know it” – well, I didn’t know it, it took me 3 days to get a clear head from a headache to actually go through the process and several weeks into this programme it was discovered that lots of people had trouble actually getting initial internet access. If we had left there with an envelope that said “This is your internet access, these are the steps...” Well I found out for the first time last week that in the back page or somewhere in the yellow pages [we were given] was the steps to do to get in contact. I had a major headache, I’m fairly intelligent, I didn’t know where the page was, didn’t know what an internet address was... Just little things – or mistakes this time that **won’t** happen next time. And a little bit more... [long pause]...one on one, as in – “This is how you put your computer together” – the little steps that...?

A number of detailed changes were suggested:

... I followed through on contacting the school in the first week of actually having it. Just little bits like – “If we haven’t heard from you in a week we’ll contact you” – little things like – “You receive an e-mail from someone: go to Tools and load that – that’s their address.” It was just a bit too much. And I support T----’s idea that the next time is **not** going to be rushed. That we start the planning process in June, for the next intake in November.

Participant A3’s husband, **A27**, had further thoughts about technical confidence of other parents, and the kind of hardware used by Computers in Homes:

I think that a home visit for each person where they can get set up at home is an excellent idea. But most of all, people who haven’t had contact with these machines are afraid of breaking

them, and therefore just won't touch it, and this is a crazy notion, because you'd have to try very hard to do something wrong with it that can't be undone. But another thing that has struck me is the whole idea of Computers in Homes seems to be to get children in the schools having contact to the computers at home and then drawing their family into the computer world, but the computers that they get at home are completely different from the computers they have at school

Interviewer: Do you think that's a problem?

A27: I do, I do.

A3: Yeah J---- keeps asking us to get an i-Mac because the school's computers are...

Interviewer: Well I asked (Principal A) about that and she said "Oh no I don't think that's an issue because to a kid it's like pairs of scissors, they might be different types of scissors but they do the same job and kids look at any computer and they don't think about them being different – so that was her viewpoint but I ...

A3: But the mouse controls for an i-Mac are very different

A27: The programme links are completely different and how you go about the task from one position to another are completely different in Windows and Mac...

Further detail showing this couple's (**A3** and **A27**) vision about how Computers in Homes could be improved for delivery to their community in the future is presented on page 195. Here it should simply be noted that a propensity towards collective action was present among a small but influential group of Case A Computers in Homes parents, led by **Participant A3**. In her second interview (see page 268), immense passion for the issue of how much better her Computers in Homes experience could have been, shone through.

4.2.2 GROUP CONDITIONS

First, evidence of social cohesion in both case studies that has relevance to group level social conditions is presented from the preparatory phase of the study from mid 2002. While participants in this research were new or very recently arrived in their neighbourhoods (19 of 26 having lived in the neighbourhood for fewer than five years) and the majority (18 of 26) were renters rather than owners of their homes, 16 out of 26 reported at Time 1 being proud or very proud of where they lived. On the whole, this group of respondents were content about their neighbourhood, and in their ratings of pride indicated that they felt good about living there. In a paper published after the first phase of this study was completed,

“differences between the goals of community leaders and those of the families involved in Computers in Homes....” (J. Williams, Sligo, & Wallace, 2004b, p. 7) were noted. This apparent disjuncture between the objectives of school leaders and the inhabitants of the study areas is pursued in the next chapter.

In each case, the school principal spoke of deeply-felt convictions about the school’s relationship with its community. In records of my discussions with them, a sense of the social fabric and social conditions in each school community as well as principals’ aspirations for it, are revealed. Also some sense of the different leadership styles became evident, with Case B being led by a very strong character aiming to effect change (arguably a top-down approach), while the two Case A principals who initially shared the role as co-leaders were evidently more democratic, facilitating leadership among those in the parent community. These differences may have contributed to the different outcomes in each case.

CASE A

As explained in chapter 3 this school was undergoing a complex restructure at the time of Computers in Homes implementation. Two principals shared the leadership role. One of them was evidently sceptical about Computers in Homes from the beginning, but this did not become apparent to me until 2004, after the restructure. At a meeting I attended at the school at this time with the Computers in Homes coordinator and two or three parents with key roles in Computers in Homes, this principal was evidently uncomfortable about giving second-hand computers to her school’s families. Her views appeared to contrast with the views of her co-principal, whom I interviewed separately. In an interview with the second Case A Principal on 7 September 2004, after the physical relocation had occurred, it became clear that the timing of the Computers in Homes scheme start-up had been very difficult for the schools to manage with such a major restructure under way. The two women sharing the principal role initially appeared to view Computers in Homes as a potentially important strategy alongside a number of others (such as upgrading computers in classrooms, providing laptops for all staff to increase confidence) for building family literacy and confidence in the educational setting, but the energy and commitment required for the restructure took their attention away from it. From the beginning of 2004, when Computers in Homes had been launched only a short time prior, in October 2003, their key task was to establish entirely new school identities and cultures. This was described as complex and challenging work that took “all our time and energy” (Personal communication, 7 September 2004) so that Computers in Homes perhaps became less of a priority for a time.

The latter principal mused that developing literacy involves a child and his or her family in a shared endeavour in which ICTs are a tool, as well as learning to discern the value of different media and sources for different informational purposes. In comments that echo those made by the principal at Case B, Principal A saw this process as a means of effecting change among families:

My own perception is that it [*Computers in Homes*] would empower the family...to be able to look at things that they maybe never thought of, or knew much about... I see it with these families as getting that information, talking with their children, their families about it, and that's empowering – that's lifting their – broadening their view of the world and what they choose to do with it – good on them.
(Personal communication, 7 September 2004)

However her view went beyond a simplistic equation between provision of computers and internet, and changed aspirations. “I don’t think you can rely on some small thing (like *Computers in Homes*) trying to deal to issues that are just so huge...the areas we want to address are literacy, numeracy, truancy and transiency...”, she observed, and went on to say that in the local social environment there are some children the school can do nothing for because:

... It is a social issue ... I can name the kids in my school ... they've all got the same reason – that they have **not** got a significant person looking after their long term wellbeing – none of them ever will, and that's sad... (ibid.)

In the context of a critical need to build social cohesion in the Case A area this principal, speaking for the school community, expressed an urgent need to embrace a variety of tactics for growing networks of social support, of which *Computers in Homes* is one.

CASE B

As shown in 3.2.2 (page 99), Case B *Computers in Homes* parents are from a large decile 1 school in the southernmost suburb of metropolitan Auckland. Key points were that the area has a high unemployment rate and related social problems, while the school population is distinctive for having a higher proportion of Māori and Pacific Island pupils than the surrounding district. Despite the challenges of a troubled community, the busy principal at this school was enthusiastic about the value of the *Computers in Homes* scheme along with a range of other initiatives that he was putting in place to address school community problems holistically. Like the principal cited above, this one was aware that, in social exclusion terminology, joined-up problems require joined-up solutions.

Case B's school principal (in the role since 1999) showed a real drive to upgrade school facilities and resources in order to help change people's perceptions of the school itself, of the area, and of themselves:

What we are trying to do is raise the aspirations of the whole community ... we're on the wrong side of the railway tracks, that's basically what it is, and everybody over here is looked upon as ... in some ways, it's a less desirable place to live, it's a less desirable neighbourhood, and so on and so forth. But if we can raise a few people with their expectations and aspirations, then that rubs off on other people and we can ... effect change. (Personal communication, 27 November 2003)

He saw Computers in Homes as one of many means of achieving this transformation:

There's been funding given mainly for ... youth at risk, Māori youth at risk ...and trying to do anti-graffiti type things in the area. It's a big task and we also have a pilot initiative that starts next year which is to reduce family violence. We are doing it not by targeting the worst families but by targeting families that we know we can effect change with, and if we can effect change with those families, that will spread out to their extended families and we can roll it over and we're doing this long term, at least six months to a year with a group of 15 families, and that's being backed by the Whanau Centre which is backed by the Pacific foundation...and of course some of it may flow over to Computers in Homes, some of it may flow over into other things, but I guess it's more of a holistic approach that we are trying - everybody's different in education, everybody learns in a different way, everybody reacts in a different way, and some people we can get through Computers in Homes and some people we can get through this other way, some people we get through involvement in another sphere of doing things, and hopefully we are targeting the right people. (Personal communication, 27 November 2003)

These views have much in common with understandings of social cohesion reviewed in chapter 2 which touches on goals of belonging, attachment and identity, diversity, and inclusion. In a more roundabout way, the principal at Case B was describing a role for the school in creating social cohesion. His rhetoric moves across numerous, diverse ideas about social initiatives aimed at a transformed community. At this time he was proud to report evidence he saw of how Computers in Homes was working, as he had noticed quite rapid changes in the school community, even within weeks of starting the scheme, including "a number of them ... have actually gone into employment of some description". It is worth re-telling his anecdote about a problem parent in this respect - a local "hard man" (**Participant B12**) who has "totally given up drugs and alcohol":

We got him involved in building the hangi which was part of the build up to the Computers in Homes thing, and... I guess the whole thing kinda came together for him, and it culminated I guess both in a cultural sense because he was involved in these... first time he'd done a hangi without being absolutely boozed out of his skull, or drugged out ...the smiles on the faces of kids and the teachers and he felt accepted without being pissed, for want of a better word, that's what he used. And he

went home that night and he wrote me an e-mail about it, and the next day he was down at Odyssey House and got enrolled and did the whole shebang...

The principal saw that this individual was potentially influential in the community, in the sense that change on an individual level is merely the first stage of a process:

And then ...he volunteered to do road patrols in the morning. He came in to see me, he said I didn't realise the boys are proud of me doing road patrol with the school, he said – it just blew me away, because he just didn't think that they would even notice, but they were quite proud of him. You know of course that spins back on the kids' attitudes at school as well, and everything else. From my point of view for us if we can get one person like that who's if you like a bit of a hard man in the community, if you get that turned around at least that's changing... he'll change other people's views, other people's minds...it's not so cool to get wasted on drugs and alcohol. And he's been fine, because I see him every day.

Later, although this parent had made a seemingly miraculous turnaround in his life and even started training to be a teacher, he abandoned that and left his family, and the district. His wife, however (**Participant B13**) went on to make significant changes in her life through using the internet at home (see page 163).

- NETWORKS OF MUTUAL SUPPORT

In chapter 3, on the basis of the literature on social cohesion reviewed in chapter 2, I resolved for the purposes of investigation that the key group level characteristics of social cohesion are networks of mutual support, social capital and collective action (Table 3-4, pages 115 - 117). Much agreement exists in the literature that cohesion in a group setting includes an impetus towards collective action, and this is especially possible where effective social networks can sustain it. Therefore data collection addressed questions of supportive social networks, results of which are summarised below.

Comments throughout interview transcripts at both Time 1 and Time 2 illustrate, typically, quite large extended families (usually a minimum of three children, and up to six, with assorted others such as nephews, grandchildren, girlfriends of older children, and so on) as well as a sense that interviewees were in the habit of engaging a good deal with their familiar networks by telephone. A good example is **Participant A1** who described her family as “my children of course, and the grandparents, my koru, partner, on and off, and I’ve got cousins who live around...we are all related and we all get together nearly every day...my sisters and that, I don’t see them very often...I speak on the phone daily with my cousins really.” Networks of support appeared strong in this instance, and “then there’s my kids’ grandmother

on their dad's side...she lives in Manurewa too, if I need anything she will usually just come straight over, yeah she's really good." **Participant B16** has found neighbouring "...easy, yeah ... like everyone else was here before I moved here, like all the houses were full – the lady across the road I've um known for a while – she's um like related to me. So yeah I'm – I've – it was easy to become – well, yeah, friends."

Others however seemed much less supported - **Participant B21** at her interview seemed quite isolated despite working as a teacher aide at the school: "most of my family are out of town" and so her tentative start at using e-mail meant a lot to her and she enjoyed the sense of closeness it brought:

Sometimes the questions you've asked them in the e-mail are answered within minutes or hours so...
Sometimes I don't realise my sister is online at the same time and there is five hours time difference and I can send an e-mail and within a few minutes I can get a reply back.

Question A15 (see interview schedule Appendix 3) probed people's active social networks: "Did you visit someone yesterday or today (not to do with work)?" with results for 23 individuals showing that ten had visited someone. While not a high number overall, this proportion still indicates a reasonable willingness to get out of the confines of the household and meet others face to face. However people seemed more active in their use of the telephone. In answer to question A16, "Did you phone someone *just to talk* yesterday or today (not to do with work)?" fifteen of 24 respondents said they had done so, while nine out of 24 said they had not. Additionally, they were in the habit of phoning their families every day: fourteen of the 24 respondents did so either weekly or every day.

Churches were a strong presence among some families, in particular the Destiny Church. The fact that the church would be regarded as the first port of call in a time of need was mentioned without prompting by at least four participants in the context of discussion of "family". The partner of **Participant B12** referred to her use of the Destiny Church website several times a week, and e-mailing other church members; other participants also referred to a strong social support role played by churches, and use of e-mail between church and home, and among families. Examples are **Participant A10** - "or like something happened you know in our church they e-mail me straight away, so that's easy if they can't catch me on the phone", **Participant B13** - "I'm in a congregation and where we are a family ...", and **Participant A2** (one who later dropped out of the research) who stated that the person she communicated with most apart from her husband and children was the church minister, on the phone.

Overall, on the basis of my observation at many events and interviews over a long period of time, Case A showed evidence of networks of mutual support more readily, both at the initial stage of the launch of Computers in Homes, and subsequently when the home internet scheme was in place. Selected typical comments - at Time 1 **Participant A4**, referring to his immediate neighbours in the street: "Well we are all the same, we are like a family, we are all helping...we sometimes share stuff, like we might get some of theirs and they give us stuff and we give them, help each other out..." This father was a very active volunteer among Computers in Homes families, calling in to other people's homes to help out with computer and internet problems, as well as being on the school Board of Trustees and doing other volunteer work. His wife worked at the school; more of their story is found in 4.2.1 – "The couple who 'pay it forward' " on page 171.

Social ties afforded just by belonging to the Computers in Homes group appeared to be positive and valuable - evidenced at meetings especially. Where parents and children are expected to meet together regularly to hear about new developments, hear a guest speaker, and talk about how they are getting along with their home internet use, there is a sense of belonging and support. On the basis of observation and comparison, however, the 'esprit de corps', the willingness to attend meetings and be involved appeared stronger in Case A from the beginning. My first encounters with this group included my general sense that there were strong figures among the group who went on to be influential in mentoring and volunteering to coordinate Computers in Homes, and that overall enthusiasm was high.

A point to note in caution is that observation of those who attended meetings, training and events could arguably be said to be a view of only those who are already motivated, and thus represents a bias towards collective commitment caused by self-selection.

- SOCIAL CAPITAL

Aspects of group level social cohesion including interaction within the community, civic engagement and associational activity, were included for assessment under the rubric of social capital. The very fact that the families in the study were involved in Computers in Homes means they were part of a community project, which required parents to attend meetings and training. Thus, as in Netville where "neighbourhood access to a high-speed internet service helped bring neighbourhood members together for face-to-face get-togethers, from visits in private homes to semi-public barbeques" (Wellman, 2001b, p. 12), social interactions and

the potential for engagement were facilitated by the way the Computers in Homes scheme works.

From survey questions in the interviews, data were gathered on belonging to clubs, churches, and involvement in community projects (questions C5, C6, page 268). On the whole, respondents were somewhat involved in civic activities like volunteering or community projects at Time 1. One third to one half of Case A respondents said they had regular involvement (weekly or more) in volunteer activities, community projects and club meetings whereas one quarter or fewer of Case B respondents did so. Overall, on a rough numerical basis, there was therefore slightly stronger evidence of social capital in Case A at Time 1.

Participant A4 was one of the most actively engaged individuals in the study – from the beginning, prior to Time 1, to its conclusion after Time 2, a point which will be discussed among others in chapter 5, considering whether internet access and use had any relationship with the existence and possible increase (Friedkin, 2004) of social cohesion especially at Case A. **Participant A4** is a father who had spent, he said, many hundreds of hours over a number of years working as a volunteer for Habitat for Humanity, and by this means the family had moved into their own new Habitat house just before the first research interview:

I'm on the school Board so I do know what's going on in the school... [in reference to his new Habitat for Humanity house] ...I help them as much as I can here and there. I have my hours which is my compulsory 500 – it's part of the deal it's called 'sweat equity' as well... but it must be close to 2000 hours now. Whenever I can I go and put in two hours here, an hour there, any hours they can get, they always appreciate.

Sports and church featured among the interviewees from both Case A and B: twelve of 25 said they had some involvement in sports, while ten talked of belonging to a cultural or religious group. Examples were **Participant B24**, who with his wife and wider family was a very active supporter of his Cook Island community centre. This involved what could be termed in a European sense as 'volunteering', whereas in his collectivist Cook Island culture it may simply be viewed as what is expected:

Well actually because we're involved in church work, we always ah...and not only church work, in our own families we are involved, we ah – and also in the community, our Cook Island community, we are always involved with those...same principle, you know

Participant B15 belonged to a close-knit church community:

We're in a church and the congregation is about – uniting? Everyone's got a dark closet that they don't want to open up and they um when they open it up they think that everyone else is going to look at [*inaudible*] they're not going to accept them because of what they've heard about that person. I'min a congregation and where we are a family and ... we've got the understanding that nobody is perfect. And ... so, help somebody, and maybe one day the help will come back to you. Ten years, 20 years, who cares? Cos they've got church fellowships around here too. And... they....They love God. With a passion. And it's – just a peaceful feeling, you know just a peaceful thought of knowing that.

He felt the enthusiasm for the church may be to do with “Oh they like the music – like that’s what we all – I suppose that’s what we all like is music – cos it’s peaceful. You can be angry, sing a song, and you’ll feel a lot better [*laughs*].”

Interested in assessing among my respondents the theory that the internet is an asocial activity that also takes people’s time away from other activities (Nie, et al., 2002) – the so-called time displacement theory – I resolved in the interview design (section 3.5.3, page 118) to include questions on whether interviewees felt various behaviours had changed since starting to use the internet. For example, were there differences in the amount of time spent visiting friends and family? Had people noticed that they were spending less time, more time or about the same amount of time watching television? Were they reading newspapers less, more or about the same?

At Time 1, three people said family time had now increased, such as through all being together at the computer. Only one person said they now spent less time with family; however six of 23 said they now spent less time with friends, and seven were talking less on the telephone with friends and family. Yet in respect of people’s *feeling* of participation in community life, nine of the 23 also reported that the internet had increased their feeling of connectedness with interpersonal networks. For example **Participant A4** remarked that communication is enhanced: “you know you can find [*the*] easy way, like just typing something and sending – you go to work – come back and get a reply, so it’s increasing, because I don’t really have time to spend ... time on the phone ...”

Of the 20 respondents who answered the question “Has using the internet changed the amount of time you spend watching television?” ten reported they were now watching less, and ten were watching the same amount. Of the 23 respondents who answered the question “Has using the internet changed the amount of time you spend reading the newspaper?” six reported they were now reading less. Generally, then, respondents had begun to be less actively engaged in maintaining their social networks at Time 1 a few weeks after starting to

use the internet; and it appears that internet use had slightly eroded civic engagement in respect of use of traditional media.

Participant B24 is a grandmother who anticipates the internet being an advantage to her in her community work because “I do a lot of marae¹⁷ business... because I’m on the committee.” Another is the other grandmother in the study, **Participant A25**, the “internet Queen” who is a focal point of family and neighbourhood networks, who remarked:

It's changed my way towards other parents... I'm online now to this other lady... I took one lady home that night, and, um, we were chatting away and it was really cool learning more and more and it's like, keeping in touch more.

This experience echoes the idea that “online exchanges may lead to offline contact and vice versa” (Hampton, 2007a, p. 716), and suggests that in this case online contact is complementing the face-to-face interactions **A25** already enjoys. Similarly, some parents reported becoming more connected to their church communities through the internet; and at both sites the local school, the hub of the community, was attempting to strengthen its ties with parents by hosting the Computers in Homes meetings and trying to encourage e-mail contact with the school. The principal at Case B reported keeping in touch weekly with families in the early weeks of Computers in Homes: “Some of them I cheat! I do a cut and paste ...and say good I’m delighted to see...da da da da. Other ones, my reply might be, that’s great and here are some interesting websites which you might like to have a look at...” (Personal communication, 27 November 2003).

Overall, Case A and Case B were distinct from one another in respect of social capital. Drawing on data from a range of methods including observation at meetings and events over time, meetings or discussion with key informants which brought in other viewpoints such as those of the Computers in Homes coordinator, the sense I acquired was that Case A parents were, on the whole, proactive, and willing to invest time and energy in doing things for the good of their school. This became evident progressively as the Computers in Homes scheme became established, ran into difficulties because of the school restructure and became more firmly embedded towards the end of the data collection period, with key figures in the group of parents actively engaged in ensuring Computers in Homes would continue there. An example is parent volunteers who drew up a roster of families who still held computers but were not using them, and went to collect hard drives for upgrade and use with new families.

¹⁷ Marae is the Māori word for a tribal-based communal meeting place, central to Māori culture.

Others are the mother (**A3**) who stepped forward to take the role of 'champion' for Computers in Homes (the person who ensures it is managed); the mother who worked at the school (**A5**); and the father who helped other families with internet or computer problems, acting as a mentor (**A4**). The sense I had at Case B was rather different. Whether it was simply a matter of chance is not possible to say; however here the parents seemed somewhat insular and passive, although the school principal was energetic, even driven, and took responsibility for Computers in Homes in the long term, taking on five new families at a time, and training them himself (D. Das, personal communication, 23 November 2008). Thus there was stronger qualitative evidence of social capital in Case A during the period of this study; a longer study over several years would be needed to arrive at a more definitive conclusion.

- SOCIAL SOLIDARITY

The last dimension of group level social cohesion built into the research design is social solidarity (see Table 3-4, page 117), a category of conditions including the ability of the group to band together to solve problems collectively and mobilise toward an agreed goal. While identifiable at the group level, collective action has to be carried out by the efforts of individuals, and is also therefore identifiable in networking activities and relationships at a personal level. Evidence was gathered from observation of individuals and groups, from numerous interviews, from attendance at meetings and discussion with the Computers in Homes coordinator over a number of years. In this section I draw upon personal knowledge of individuals whom I met on a number of occasions, and whose activities initiated or sustained group level collective action, and focus on respondents who displayed characteristics of leaders and were instrumental in the viability of Computers in Homes at Case A.

At Case A, shared commitment was very evident among parents by mid 2005 in a public setting described below, but which had been incipient since the first interviews I completed with them in 2003 - 2004. A key member of the parent group who took collective action to ensure continuity of Computers in Homes at their school is **Participant A3**, who ultimately took up the role of Project Champion at Case A from late 2005. Here I present an aspect of her role in Case A that provides evidence of her strong sense that she was in a position to bring about change for the good in Computers in Homes, and was willing to do so. At her second interview in September 2004 I asked for her thoughts about this. Her husband, **Participant A27**, interjected from time to time.

Interviewer: It seems to me you are a good example of another part of the Computers in Homes philosophy which is the mentoring side of things. Now that you've acquired a certain level of skill and experience, now you are actually wanting to go on and use that to help other people within the school community...

A3: But behind the scenes I'm not a very upfront person!!! *[laughing, embarrassed]*

Interviewer: ..but that's supposedly the whole thing I mean as you say that people share their skills with family members and ...is that something you think has worked, like – is it something that can help to strengthen the school community?

A3: I think *(Husband, A27: Yes)* the theory behind it, absolutely, I just think that this time there's a little bit more... streamlining...

A27: Yeah the theory's right, but they didn't get the practice right

A3: ...and we're probably a case in point, where a little bit more foundation work was necessary and wasn't done. The idea, the concept is brilliant

Interviewer: And yet from the first time I met you which was at one of the training sessions in the library at school, you were, you know, determined to not let those sort of things hold you back, you had the confidence to actually say or ask or say "But this isn't working!" or whatever...

A3: Yeah but I was ignored! *[laughs]*

Interviewer: Other people who don't have those communication skills actually...

A3: Yes well obviously something has happened because we've got people who went months who weren't connected, and – that fell flat, and I don't want to see that happen again. If things are simply worded and it's step-by-step – manuals are excellent if they're worded at a level that people can understand and take themselves through. That whole concept is great – unfortunately the manual that we were supplied with ...um...

A27: Some of it was just plain garbage the way it was written, it just did not make sense

A3: It was written by techies – it wasn't written for people starting out, and it's been recognised by other people in the programme that it needs to be worked on.

I came across no such evidence of the emergence of a collective commitment to change at Case B, where many more of the respondents I had interviewed at Time 1 became unavailable for further involvement. As time wore on and quotations from Case A interviews in 2004 (below) will attest, a desire for something better out of Computers in Homes was fermenting among individuals there. In June 2005, a "rejuvenation" meeting was held at the

new school, organised by the Computers in Homes national coordinator and drawing on funding that had been found to clean up and upgrade hard drives.

Attendance at this special meeting was encouraged with an incentive: parents who came along and responded to a written survey for Computers in Homes could put their names into a draw for a laser printer. The meeting included about ten of the 'old hands', many of whom had been participants in the both phases of this research (including **Participants A3, A4, A5** and **A25**, among others). The agenda included discussion of imminent computer upgrades, which concluded with parents deciding to collect the hard drives from homes where they were not being used; how to make the project work better in future for new families, and again, parents volunteered to buddy new parents. They also brought forward ideas on how the initial IT training could be improved, based on what they had found unsatisfactory in their own induction into Computers in Homes in October 2003. By their public comments it appeared they were motivated to continue to be involved and to follow through with the discussion of checking where the computers were and who no longer needed them, organising training and so on. In addition, the school principal, previously sceptical about Computers in Homes, was now very supportive of seeing it continue.

After the current research was completed, these parents continued to actively manage Computers in Homes in 2006 and beyond, by training parents new to the scheme, and administering it themselves at the two school sites, according to the Computers in Homes national coordinator (D. Das, personal communication, 23 November 2008). Grassroots participation was beginning to drive the scheme at this time, in the way predicted by Gaved and Anderson (2006) in their hypothesis that endogenous ownership of community ICT is more likely to lead to sustainability. At Case B, Computers in Homes is handled differently: the principal carries the impetus and responsibility entirely by himself, training five families at a time. As is to be expected, in different community contexts different processes will be effective. Arguably, evidence of collective action was more apparent in Case A because of the chance factor of a group of strong characters, who could be characterised as opinion leaders, being involved.

OPINION LEADERS

From the beginning of the research among Case A parents in 2003, **Participant A3, A4, and A25** in particular, all of whom were core figures in the collective action described, stood out as individuals who would speak up at meetings, ask questions, and freely share their opinions and experiences. **A25**, jokingly called 'The Internet Queen' by other parents, enjoyed being

somewhat comical in what she had to say at meetings, thus showing willingness to publicly individuate. Other parents clearly enjoyed her larger-than-life character and admired her success with and enjoyment of her free internet at home. She had influence in the group.

Strong characters among the group of parents at Case A, who were high-connectors, confident and outspoken, and willing to step forward to take responsibility were identified. These observations echo Burt (1999) that so-called opinion leaders tend to be able to use new high-tech products, are heavy consumers of the mass media, and are socially active, self-centred and self-confident (Burt, 1999). In an environment of situational anxiety and uncertainty such as uptake of a new technology described as “equivocal” (Vishwanath, 2006a, p. 324) individuals beginning to engage with the internet are likely to look to more influential others who may also be perceived as having higher status. Opinion seekers may thus be readily influenced by the information received from those higher-status opinion leaders. The literature also suggests that “conformity pressures” (ibid., p. 327) are greater in a cohesive group, implying that where cohesion is present then the views of others are valued more, and the process of opinion leadership may be more prevalent. Noelle-Neumann (1999, cited in Shah et al, 2006, p. 2) suggests personality strength is another feature of opinion leaders, borne out in the observed behaviour of individuals named above.

These individuals also seemed to somehow recognise the value of the opportunity they had in Computers in Homes, and for this reason are able to exert agency in their situation and take advantage of the opportunity. **Participant A3** commented about joining Computers in Homes and getting the internet at home that

I'm sure it was the final piece in the jigsaw puzzle – from the point we got that computer in this house, and I was practising typing, loading the business plan, and then things just overtook it... It gave us the physical – step where we had been putting it off, and putting it off, we just didn't have \$2000 for a computer package. There was just no way we could have afforded that. Actually physically having the computer at home and having internet access and becoming a bit more computer literate was like a foundation stone. I mean we could have waited another 4 years to get the business up and running as solidly as it is now –

Her husband, **A27**, went on to explain

and that's why it's worked for us – your question why are we using it and other people don't seem to be – I think that's probably largely to do with our education levels, and our communication levels. We have the inquiring mind and the confidence whereas many of the people that I've seen in this area – I haven't had any contact with anybody else in the programme except before the programme started, and from what I can see of the people that were in the room, I can't imagine the machines being

used much more than games for the kids or e-mails back to aunty. So I think it's probably an ability level that you need to be at before you're ready for the computer.

Participant A25 expressed the view in her first interview in April 2004 that having the computer and internet at home was something she valued highly, and was surprised that other parents didn't appear to feel that way:

Honestly you know - given something for nothing, why - not use it? You know that's my point of value, it's like: whoa, you know now we get to start playing, cool, you know I'll do it, now, but - they were given something for nothing! - how many times do you get that?! - other than presents or you know... but if they don't take the advantage [??] - it's, like, Sheesh! But I mean it wasn't only [for] me it was like these ones, it was like [for] my kids, it was like...

Four parents from Case A exhibited a combination of opinion leader characteristics, sociability, communicative confidence, willingness to fully take on board the opportunity, and enthusiasm for the internet. One parent at Case B, **Participant B15**, also exhibited some of these characteristics but because he dropped out of Computers in Homes, and this research, his potential contribution as a leader within the Computers in Homes group at Case B came to nought. The four Case A parents, who continued to have contact with one another through the structure of the Computers in Homes process (meetings, events, administration) and being part of the same school and community network, began to take responsible leadership roles in the forward impetus of the scheme at this site. They could all be described as having higher status than other group members in different ways, although they did not have formal appointed Computers in Homes roles at the beginning of the research. They shared qualities of assuredness. **Participant A3**, by virtue of having the confidence and life experience, was highly articulate and therefore impressive on an interpersonal level; **Participant A4** had a role on the school's Board of Trustees as well as a significant role as a community volunteer; his wife, **Participant A5**, was employed at the school as a teacher aide; and I observed **Participant A25** was regarded with humour and admiration as a natural leader by others in the Computers in Homes parent group. She was also particular in pointing out to me in her interviews that she had an incomplete teacher's training qualification but clearly, nevertheless, viewed herself as having some expertise and opinions worth sharing: she may have conveyed this self-image to her peers among the Computers in Homes parent group as well. Subsequent to this research, **A3** became coordinator of Computers in Homes at one of the schools at Case A, **A5** became coordinator at the other school site within Case A, **A4** took on a role training new parents, and **A25** assisted with visiting homes to collect unused computers and generally keep track of who was still in the scheme.

Participant A4 was a highly visible and active leader of others. I first met him at the initial training session when Computers in Homes was launched at Case A in the school library. He introduced himself as someone who would be interested in participating in the research I was proposing, and mentioned he was on the school's Board of Trustees. At Time 1, he was already a mentor for other families and, at one or two interviews in other households, he was there when I arrived for interview appointments, hovering over someone's shoulder at a computer, helping them to get started. He was a regular around the neighbourhood.

At his first interview, I unwittingly woke him from a day sleep, as he was doing shift work at night. Both he and his wife, **Participant A5**, took part in a slightly chaotic first interview as noisy young children bounced around the room and their parents, immediately after returning home from school. **Participant A5** was well known to other families as someone who worked part-time at the school. Together, the couple were already very involved in the life of this community, at school (one a school employee, the other a Board of Trustees member, and Computers in Homes mentor) and more broadly, with Habitat for Humanity. **A4** had donated his 'sweat equity' to the building of other houses, and the new house the family had just moved into not long before Time 1 in this research, was a Habitat house. The couple were very proud of it.

Participant A25 was an interesting individual. She was an avid internet user, concentrating mostly on e-mail and chat rooms and regarded it as mostly an entertainment medium, "just my pastime" in a life circumscribed by caring day and night for an elderly father living at home. She held strong views about how Computers in Homes could be improved for future families, and appeared to feel partially that some other parents were to blame for unsuccessful internet use: "people are too scared to – maybe it's their culture, maybe it's just them, they think that it's their problem and – you know they haven't been bothered to come to meetings and that because they could be scared that it's all those things..." while Computers in Homes 'delivery' itself was also to blame. For one thing she felt "a lot more communication, better communication" was needed, which would be by "calling frequently, you know, like really communicating with them... one on one sort of thing... go out of your way just to make them feel more comfortable, make them feel that it's not their problem, you know – have you got any problems? Do you want to talk about it?" A somewhat judgemental attitude was present, however, about other parents who she felt were sitting back and taking advantage: "'hey I've got a computer for nothing, nobody even spoke about it or you know worried about it...oh but I don't mind it's still working so...' - I mean, God!" Perhaps in an endeavour to overcome communication barriers to effective internet uptake, she reflected

But you know like I saw this - these island people were just – null and void – it was like they were like “oh you know it just stopped, and yeah so we just stuck it in the back room”- and told the kids they weren’t allowed to touch it or... you know how can we maybe solve this? So I thought well maybe it’s just me but I would take it one on one.

A glance at **A25’s** transcript will show the sheer volume of her opinions, and give a sense of her confidence in disclosing her thoughts. One of many features of this interview is her desire to contribute her experience as a member of a small group, “a little sub-committee” that could carry the Computers in Homes scheme forward; that the resources of the Case A community could come into play and improve parents’ engagement with their internet access:

I think **we** could make it work, like we as families - myself, and ah what’s her name, that other lady... [S-, P3] and ah there was a couple from the school, like there’s that teacher that didn’t turn up, her husband’s [P4] on the Board of Tr - you know sort of people like myself, like you’ve got one from each culture, if you know what I mean, and maybe at an assembly or something like that, you know – or, what, a parents’ meeting you know we could ... get up and say what it really has felt to us, you know, and maybe – by parent talking to parent rather than ... teachers talking to parent... It’s better if we had a group, just like a little group of us just like one Island and Maori and ah European, you know? Like, OK – so if one is a Samoan well we could send a Samoan out or... even if S--[P3] went out, but you’d have to be able to communicate, community-wise, rather than just going and “Oh, where’s your computer?” – you know - “Why haven’t you done this, why haven’t you done that?” it’s like... people are gonna just say “Just take it back.” And then if I get no – like, lack of communication from the school you know, it’s like, I’m just sitting here rubbing my hands going “Oh, goody, nobody’s even worried about me.”

So it came to be: **A25** was a vocal and active volunteer in the Computers in Homes scheme rejuvenation at Case A.

Thus at the group level, the elements of social cohesion were more readily apparent at Case A: opinion leaders, strong family and group networks, pride and belonging, and active volunteering, and the beginnings of commitment to a shared goal. This process became evident over time, and arose from the Computers in Homes mode of practice based on social interaction, rather than internet use per se.

4.2.3 SUMMARY: SOCIAL COHESION AT CASE A AND CASE B

Both cases are similar in terms of how long people have lived there, with a tendency to be relatively recent arrivals. Case B shows a preponderance of renters (10 rent, three own), unlike Case A, where more people own their houses (four rent, five own). In addition Case A seems to include proportionately many more individuals who feel settled and do not intend to

move (seven of the nine). In Case B, seven of 13 said they were unlikely to move. These findings imply the potential for stronger social cohesion in Case A than in Case B.

A trend towards pride in living where they do is evident in both cases, although there were exceptions. **Participant B12**, regarded as a conspicuous success at Case B in acquiring the skills to find a route out of his social environment reported:

I'm a born-again Christian, and I was going to suggest not at all proud, but I think because of the situation I'm in and where I'm at I can see that this street here needs fixing up, needs pulling together ... I'm here for a reason, to clean the street up and be drug-free, because it's a predominant street for P and marijuana and ... this is The Bronx.

He clearly wanted to live in better circumstances, and had mixed feelings about his neighbourhood. He had moved away from his family and the district by Time 2.

A two level social cohesion framework was designed for this research, after Friedkin (2004) who argues that cohesive group conditions are the antecedent of individual behaviours. In Case A, this process can be seen occurring, with cohesive conditions being present already in spite of turmoil at the school and confused accountability for Computers in Homes, and in turn, the individual behaviours serve to reinforce the group level conditions. Friedkin (ibid.) suggests cohesion is present when group level conditions and outcomes (such as a propensity towards collective action) are evident, and that this must be present before more individual level behaviours associated with cohesion (such as volunteering) can be increased.

In Table 4-3 below, Case A shows a good 'fit' with this model. More active networks, more social capital, more civic engagement were present at Case A than Case B, as well as the belonging aspect indicated by home ownership and other features of pride and satisfaction in living in the area. In turn, I found not only that uptake of the internet was more successful at Case A, with "high-connector" parents being proportionately more numerous here (while at Case B there were no "high-connectors", and all of the "low-connectors" came from here), but also after one year, the internet was retained by many more families in Case A than in Case B. At the end of my study in 2005, the remaining Case A parents who were still involved with Computers in Homes were taking initiatives to drive the project forward and, later, trained new parents, among other proactive tasks, In 2008 I asked the Computers in Homes national coordinator for further detail on what had transpired at Case A, asking "What **did** happen after the 'rejuvenation meeting' in June 2008 where it was evident to me that a core group of committed parents were keen to see the benefits that they had enjoyed from Computers in

Homes made more readily available to a new group of families?” Her response was first, that unused equipment was found – “the training pod (group of PCs for use at school) had not been installed or set up – they were stored in a room, unused” (D. Das, personal communication, 23 November 2008). Subsequently

[the PCs] were returned to The Ark for upgrading; more funding was obtained by Computers in Homes for cabling and wiring in the school – to re-establish the Pod at the school. R----- **[Participant A4]** trained a new group of 8 families who were much happier using the internet with ‘Watchdog’. F----- **[Participant A5]** continued to be the school coordinator at R---- School, while S--**[Participant A3]** did the same at Te Matauranga. (D. Das, personal communication, November 23, 2008)

Evidence of social cohesion at group and individual level for each dimension from all methods in Case A and Case B is broadly summarised below in Table 4-3. The table relates to Table 3-4 (pages 115 – 117), which lists the dimensions of social cohesion determined for this study. Darker shaded cells show that the social cohesion characteristic is more marked in that case:

INDIVIDUAL LEVEL BEHAVIOURS	CASE A	CASE B
Social connectedness: <ul style="list-style-type: none"> - unpaid work outside the home - household access to telecommunications (NB: all households in this study had internet access provided) - frequency of interaction with family/whanau and friends 	Strong evidence of unpaid work outside home; Internet uptake more successful initially and retained by many more families; One half felt more connected with family & friends after internet provided	Most parents not engaged in unpaid work outside home; More internet “low-connectors” here; One third felt more connected with family & friends after internet provided
Routine day to day life	Observation of proactive individuals who exerted agency	Observation of more passive individuals
Inclusion	More evidence of positive neighbourly attitudes apparent	Evidence included being more private, showing disinterest or suspicion
Support	Stronger neighbourhood networks comprised of greater numbers such as known neighbours. Trust and life satisfaction was higher.	Fewer neighbours known; more insular, managing by themselves; sense of distrust of others, or lack of interest.
Place attachment and identity.	More permanency (home ownership), attachment (pride in neighbourhood), willingness to commit to shared tasks.	More renters; similar levels of pride and interest in neighbours; for no apparent reason, little evident interest in being part of a group – more separate.

GROUP LEVEL CONDITIONS & OUTCOMES	CASE A	CASE B
Networks of mutual support	Stronger evidence over time: closer relationships, trust between individuals who knew one another well	Ties were present but less of an observed sense of familiar and close relationships with one another
Social capital	Much stronger evidence in individuals making active efforts to volunteer in a range of ways	Less involvement in community action; less 'networked' as a group
Social solidarity	Evidence more apparent of collective action through parent / school / neighbourhood networks	Computers in Homes initiative carried by one person (school principal)

Table 4-3: Summary of results for social cohesion at Case A and Case B

On this basis Case A showed stronger evidence of social cohesion in most dimensions. On the whole, Case A participants were more engaged in community life than Case B participants, such as being involved in school events and committees, and over the course of the study Case A parents continued to be the sorts of people who spoke up at meetings, showed confidence and sociable tendencies. They knew many more neighbours on average than the research participants in Case B did, and were more positively inclined towards them, also feeling more comfortable about asking neighbours for help. In these respects, the Case A group was more noticeably cohesive. It was also marked by more permanency and belonging, with more of the families owning their own home and intending to live there for the foreseeable future. In these ways, Case A was distinguished by a sense of place, evident in the neighbourhood networks focusing on the school, the connections between parents helping one another out, the sense of community identity. In general these underscored the importance of the real, face to face world and the quality of social solidarity for supporting the process of getting families online and keeping them online.

CONCLUSION

Data were collected using a variety of methods in two cases from 2002 to 2005. This chapter has summarised the results according to the research goal which brings together two key elements, internet access and use, and social cohesion. These elements form an organising device which points towards some resolution, in the next chapter, of the extent to which the propositions underlying the research goal are supported.

At Time 1, evidence of social cohesion was already present in the attitudes and behaviours of respondents particularly at Case A. Evidence included participants' strong identification with, and pride in, their neighbourhoods, volunteerism and supportive neighbourhood networks. Enthusiastic uptake of internet activities, principally e-mail, and a valuing of social goals in using the internet, were also noted. On the other hand sub-groups of high- and low-connectors were present. Over time, barriers to internet use, domestic transience, and a relatively high dropout rate from the Computers in Homes scheme by Time 2 contributed to an overall decline in internet use in the two cases, results that were important for the first component in the aim of the study because they clearly show internet access does not equate to internet use.

Nevertheless, results at Time 2 suggested not only that internet connectedness was stronger at Case A, but also social cohesion had been strengthened there. This outcome may have more to do with the fact that Computers in Homes fosters social networks by bringing local families together, than the use of the technology itself, as well as showing the influence of opinion leaders. Subsequent reports confirm that Computers in Homes was re-invigorated at Case A, based on Computers in Homes parents' own initiatives aimed at improving the experience of Computers in Homes for future families. Scheme continuity was assured not only by the activities of these individuals but also by the coordinated efforts of a number of stakeholders and project management from Computers in Homes, altogether demonstrating stronger social cohesion arising from the Computers in Homes intervention.

The results set out in this chapter according to the research propositions and research goal - to assess how internet access and social cohesion are related in a free home internet scheme - show overall a circular process is implied for building social cohesion through a free home internet scheme. This recursive process works first from existing group conditions, which generate individual behaviours such as support for others in the use of the internet, which in turn facilitate the development of more cohesive group conditions (Friedkin, 2004) directed at supporting more individuals, and so on.

While there was an overall decline in internet use in the study, evidence of more sustained internet use and more social cohesion was recorded at Case A. It may be speculative at this point to conclude that these results are proof of a positive relationship between social cohesion and internet access; however I suggest that this relationship exists under certain conditions. These findings will be taken forward through discussion in the next chapter.

CHAPTER 5: DISCUSSION

INTRODUCTION

Implications of the research results presented in chapter 4 are now explored. In particular, in view of the goal of the present study to assess how internet access and social cohesion are related, the relationship that appeared to exist at one of the two case study sites will be carefully considered. Considerations of particular importance are: what may have influenced the relationship in this case; and are certain conditions indicated that may apply in similar cases in order for internet access and social cohesion to be related in such a way?

The study was inspired by flourishing debate in the 2000s about the potential of the internet for building stronger communities, and by the establishment of schemes such as Computers in Homes in New Zealand and the UK Online programme providing community-based public access centres (Loader & Keeble, 2004), among many more examples worldwide. These types of response to the digital divide arise from the view that social regeneration through the rebuilding of community life can be achieved with “the social adoption of ICTs ... regarded as a powerful set of tools with which to reconnect people and engage them in social relationships” (Loader & Keeble, 2004, p. 37).

Results in the present study were derived from case study research in low decile school neighbourhoods among families who had not been able to access the internet at home prior to the intervention of Computers in Homes. The study participants were drawn from groups of families selected by school staff at Case A and Case B as being likely to benefit from the potential the internet is thought to afford for broadening horizons, accessing educational opportunities, and becoming more socially connected. In turn, these measures were seen by the schools as ways to draw school and community closer together in the educational endeavour, reflecting concern embedded in knowledge economy discourse (Loader & Keeble, 2004, p. 1) over “the emergence of a ‘digital divide’ between those able to exploit the potential of ICTs and those who remain socially and economically unconnected to the ‘network society’” (ibid., p. 1).

THE RESEARCH GOAL AND THE RESULTS

In the introduction to chapter 3, two underlying propositions for this research that incorporated key assumptions about internet access and social cohesion were identified. In turn the propositions (P1 and P2, see Figure 5-1 below) led to decisions about the research design such as that internet use would be traced over time and social cohesion assessed likewise, so that relationships between these characteristics of the study sample could be inferred across two case studies. This chapter now addresses the ways in which the results in chapter 4 suggest internet access and social cohesion are related. Figure 5-1 reviews how the results of the study relate to those propositions:

PROPOSITION		RESULTS	PROPOSITION SUPPORTED?		
			Case A	Case B	Whole group
P1	Free home internet access leads to ongoing internet use over time	<p>Around 2/3 of the original total group of 26 (Case A + Case B) dropped out; overall a decline in internet use was documented among the remaining 1/3.</p> <p>However, higher retention and more enthusiastic uptake were found at Case A</p>	■	×	×
P2	Internet access is positively related to evidence of social cohesion.	<p>Under certain conditions, this relationship evidently exists where:</p> <ul style="list-style-type: none"> - free internet is provided for households that have not had it before; and - group level networks of support and civic engagement (such as willingness to mobilise behind a shared goal) exist, which facilitate... - individual level behaviours such as volunteering. 	<p>■</p> <p>■</p>	<p>×</p> <p>×</p>	<p>×</p> <p>×</p>
			<p>■ Support found</p> <p>× Support not found</p>		

Figure 5-1 Results in relation to the research propositions

“Converging lines of inquiry” (Yin, 2003, p. 98) began to highlight key outcomes of the study. By the end of chapter 4 it became clear in reviewing results holistically that differences existed between Case A and Case B not only in terms of internet use but also social cohesion (summarised in Table 4-3 at the end of chapter 4). At Case A, where the majority of those

who remained active internet users throughout the study were located, social cohesion was more apparent prior to the free home internet scheme being implemented. Subsequently, that social cohesion – particularly at individual level, such as more active volunteering and more internet use, but also at the group level, such as more visible networks of support and mentoring - appeared to have a pay-off in positive outcomes for the Computers in Homes scheme at Case A. Not only was there a better retention rate of internet users, but also a number of parents committed themselves collectively to managing the Computers in Homes scheme into the future at that site, as volunteers in various capacities.

The results of these case studies suggest that P1 and P2 have support under certain conditions. Assuming that they are applied to a specific free home internet intervention such as Computers in Homes, the two case studies show that a community that is more cohesive in the first place is likely to provide the supportive social setting where new users lacking in experience and knowledge can become confident online. They are likely to find that the neighbourhood or school networks augmented by the socially interactive nature of Computers in Homes will provide encouragement, advice and informal mentoring volunteered by other families.

CONTRIBUTION OF THIS STUDY TO THE FIELD

The present study falls within the relatively new, and inter-disciplinary, sub-field of community informatics, which consists of “the study and practice of enabling communities with information and communications technologies (ICTs) ... to enable community processes and the achievement of community objectives including overcoming ‘digital divides’ both within and between communities” (Gurstein, 2007, ¶1). The literature review in chapter 2 (page 67) drew attention to the fact that research on the internet and social impacts is still in its infancy, according to Gaved and Anderson (2006) who comment on the relative novelty of the field, while Williams (2006) remarks on a “scarcity of longitudinal research”. Some point out that extended periods of research need to be conducted – for example, for five years or longer – in order for a full understanding of the social impacts of the internet to be gained (Gaved et al, 2006).

While it is thought to be too soon in the maturity of this field for coherent *theory* to be identifiable (Loader & Keeble, 2004), some *themes* became apparent in the literature during the period that the present study was being conducted. For this reason there are some points

of reference against which this study can be compared. Loader and Keeble's meta-analysis of 49 community informatics projects worldwide (Loader & Keeble, 2004) aimed to establish the extent to which these sorts of initiatives are addressing the digital divide, finding that while optimism was not yet justified, some broad themes were evident. Discussed in the literature review (refer section 2.3.1, page 75), these are principally (1) public access sites such as schools and libraries may create a barrier to internet use by the excluded; (2) feelings of failure among educational underachievers may deter them from attending ICT training; (3) sustainability is a problem common to almost all community informatics projects; and (4) increased civic participation was limited to a few cases (*ibid.*).

Results in the present study contradict most of these themes in one case study (Case A), and reinforce them in the other (Case B). First, theme (1) was not supported in Case A, where the results of observation show that Computers in Homes families were very much at home in the school staff room for meetings. Furthermore, **Participant A25** is an example of someone who also used the internet at the public library as well as at home. Her collectivist, Māori culture with its oral tradition and strong emphasis on the extended family make her, as well as others in the research group, suited to the socially structured learning inherent in the Computers in Homes scheme, as well as to public internet access where social support is available. In my estimation the culture of Computers in Homes embraces the cultures and learning styles of the families with whom it works, in a way that Ganesh et al (2009) describe as "in relationship" with communities (p. 871). However in Case B, families appeared somewhat less comfortable in the school environment, such as the school hall, and family meetings I observed were less well-attended. It is not clear from the results of the research why this community of families was less responsive in the social setting, and this therefore is a lead for further research, in particular reflecting on the claim made by Ganesh et al (*ibid.*) that "community silence can be seen to have alarming and long-term implications" (p. 860).

Loader and Keeble's Theme (2) relating to education underachievement and lack of interest in attending training was not overtly supported in either case, although some Computers in Homes participants were reticent about training at the initial launch event for Computers in Homes in Case A in September 2003. Also indications for this tendency appeared from time to time: for example, one principal's comments that getting parents through the door of the school was an achievement in itself, helping to break down perceptual barriers in respect of educational settings, something that has to happen before any real educational progress can be made.

Theme (3), the problem of sustainability in community building schemes that is said to be a “common feature of almost all community informatics projects” (Loader & Keeble, 2004), was supported by the results in Case B. The high attrition rate of Computers in Homes participants at Case B is one illustration of the sustainability challenge. Hargittai (2002) came to the conclusion regarding the digital divide that

Merely offering people a network-connected machine will not ensure that they can use the medium to meet their needs because they may not be able to maximally take advantage of all that the Web has to offer. Policy decisions that aim to reduce inequalities in access to and use of information technologies must take into consideration the necessary investment in training and support as well. (Hargittai, 2002, 'Conclusions' section)

One important implication here is the question of funding required to resource training and support, a matter for public sector decision makers, private and community interests, and government ministerial staff to resolve so that policy rhetoric about the internet and community is matched by a serious commitment of ongoing funding.

Finally, in reflecting on how the present study relates to the state of play in the community informatics field reviewed by Loader and Keeble, stronger evidence of social cohesion more generally, including very active volunteerism, was evident at Case A more than Case B. Therefore in a departure from Loader and Keeble's (2004) community informatics Theme (4) about increased civic participation being rare, there were positive signs in Case A that a group of participants mobilised, and committed to collective action that would contribute to social cohesion.

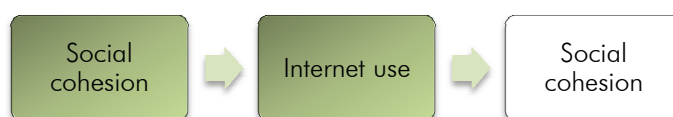
Other reference points in the literature include those addressing whether or not internet use is taking us away from other activities, as well as how it 'fits' with our offline social networks. The time displacement theory suggesting that internet use displaces other forms of social activity (Nie & Hillygus, 2002) and that “time online is largely an asocial activity” (2002), are views that have now been largely superseded. Wellman and Haythornthwaite (2002) have argued in the past in a hydraulic or displacement hypothesis that time spent online can only subtract from time spent on other activities, such as face to face interactions with family and friends; furthermore they pointed out it is time spent alone. By contrast, today Wellman argues that the internet takes time away principally from television viewing and sleep (“Connected lives: The new social network operating system,” 2009). The present study appears to confirm the view of Wellman et al (Kennedy & Wellman, 2007) that the internet is not having a deleterious effect on social lives, but facilitating communication with offline as

well as online networks. It also aligns with studies showing that the internet enhances neighbouring (Hampton & Wellman, 2003). Importantly, as shown in chapter 2 (section 2.3, page 69) “the evidence suggests that the Internet is ... slowly building local social networks” (Hampton, 2007a, p. 739). It is stressed however that this evidence is found “in those neighbourhoods where context favours local tie formation” (ibid.) where, for example, the neighbourhood already has an interest in building community. This hypothesis resonates with the findings at Case A in the present study.

Because of its unique design, and the relative lack of similar studies especially in New Zealand, it is difficult to compare this research with any other. Although there were some leads to follow in planning and conducting the present study, in many respects it investigates new ground, offering a distinctive design – a strength that will be addressed at the end of chapter 6 - and extended understanding of the relationship that may be expected to play out in a community setting between home internet and social cohesion dynamics.

THE RESEARCH GOAL AND THE WAY FORWARD

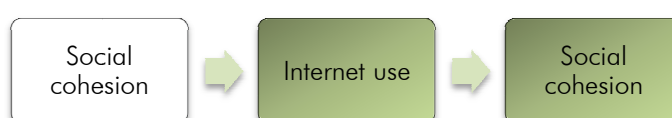
The process below was posited as a possible model for the relationship between the internet and society in chapter 1 (Key constructs, page 5): a socially cohesive setting will facilitate internet use. Indications are that a relationship between social cohesion and internet access appeared to exist at Case A, such that more success was experienced by that relatively socially cohesive group in terms of the use that was made of the internet access provided. This outcome is summarised in the first step highlighted in green:



This step could be understood to represent a social constructivist interpretation of the relationship between the internet and society: people make use of technologies within social settings that help them to understand and use them in ways that suit their situated purposes. As Loader and Keeble (2004) put it, this may be thought of as the “social shaping of technology” perspective (ibid., p. 39) in which “the technology is of secondary importance to the social, political, economic or cultural objectives of a programme” (ibid.). In Case A it

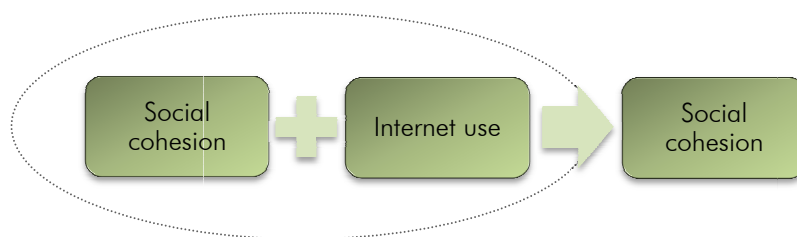
could reasonably be assumed that the socially cohesive setting of neighbourhood networks and norms of volunteering, for example, were group level conditions that helped less confident internet users to stay connected.

However what is more problematic to determine in the study is the extent to which the apparent strengthening of social cohesion at Case A was directly related to internet access, a possibility represented in the second step highlighted in green below, rather than to another factor.



The step highlighted above could be understood to illustrate a technologically determinist view of the relationship between the internet and society: technologies bring about predictable change at the social level, an understanding that was shown to prevail in provider and policy discourse in the literature review in chapter 2 (refer section 2.1.8, pages 42 - 45). However a more realistic, empirically grounded understanding may be achieved if both representations are taken together. In this way, an implication emerges that in implementing a community internet scheme for social cohesion outcomes, a balance between (1) the need to understand and work with the social conditions, as in social constructivism, is needed in order for (2) the internet intervention to have more predictable results, as in technological determinism. Both approaches were evident at Case A.

Rather than a straightforward 'cause and effect' relationship between internet access and social cohesion, the evidence from this study suggests the success of free home internet in building social cohesion at Case A was more to do with the social nature of Computers in Homes practice, and the presence of strong individuals who were leaders and mentors, than with the technology itself. Thus the relationships between the internet and society could be better understood in the following way: internet use is facilitated by a socially cohesive setting; then together, internet use within a socially cohesive setting facilitates further cohesion in turn.



This model of the relationship between the internet and society implies that an already socially cohesive group makes use of the internet in ways that help to build further cohesion, evident in, for example, people's feelings about neighbours, and about being safe and supported, "when group-level conditions are producing positive membership attitudes and behaviours" (Friedkin, 2004, p. 410). These inferences lend support to the value of a socially constructivist framing of the digital divide, more than a technologically determinist one. People will make meaning of technology in a social context, in ways that make sense to them together, rather than making use of the technology in predictable and uniform ways, to the same extent and the same degree, an objective that appears to predominate in policy discourse as shown in chapter 2.

Taking an overall view of this case study research, the group level conditions and outcomes characteristic of social cohesion were more evident at Case A at the beginning of the study, as characterised especially by the 'neighbouring' element, volunteering, and household permanency. These results echo the findings of Hampton and Wellman (2003, 2007) whose E-Neighbours study showed that the internet facilitates "interactions near the home" (Hampton, 2007a, p. 714) but that this tends to happen where the social context is favourable (ibid., p. 39). Moreover, as time went on, internet uptake at Case A in the current study was demonstrably more successful than at Case B. This result may imply that, in the conditions typifying low decile suburban school communities, internet uptake will be more successful where existing social capital is purposely harnessed to support community internet initiatives. This point is also reminiscent of Gaved and Anderson's (2006) finding that "social capital needs to be in place already for it to be built further" (p. 27).

Accordingly it may be that, as is hoped by providers and strongly indicated in New Zealand's social policy, providing internet access can have a relationship with improved community outcomes – in the right conditions. The Computers in Homes intervention at Case A coincided with the presence of a group of socially engaged, if technologically impoverished, families who already demonstrated a variety of the characteristics of a cohesive group. Computers in Homes meetings, training and other activities are very much based on the

existing school social networks, so that the social interactions around 'the internet' as well as the potential for parents to become more networked online, in turn may have built up the social connectedness of the group. Loader and Keeble (2004) concur with the point that so-called 'community informatics' (refer chapter 2, section 2.3.1) schemes like Computers in Homes succeed because of the way they use a social setting as the vehicle:

Informatics, the social adoption of ICTs, is regarded as a powerful set of tools with which to reconnect people and engage them in social relationships. Through community technology centres (in all their different guises...) where local people can meet and undertake computer courses, take advantage of the provision of community hosts and servers and undertake the development of community websites, the new media have become indispensable to community development in the information society. (Loader & Keeble, 2004, p. 37)

The neighbourhood itself, with its existing social cohesion, appears to be a vital component in the continued achievement of Computers in Homes "contribution to social capital in low income communities" ("Computers in Homes ", 2007, Background to the Project section), along with the social relationships that develop as a result of the way the scheme works. These principles resonate with the argument that "participatory communication is a key value" (Ganesh & Barber, 2009, p. 859) in community ICT¹⁸.

5.1 INTERNET USE IN THE LOW-DECILE SETTING

In Chapter 4, results of the study over the two phases of the research showed an overall decline in internet use. The decline was evident in different ways including anecdotal and observed events such as families relinquishing their computer to the school, leaving the area or finding themselves no longer eligible for the Computers in Homes free internet access because of the age of the children at home. Survey data gathered from among the remaining nine participants at the second phase showed a falling-away in internet use. While any tentative conclusions drawn on the basis of quantitative data from a small sample should be treated with caution, a qualitative researcher may legitimately "develop working models or theories in action that explain the behaviour under study" (Janesick, 2000, in Denzin & Lincoln, 2000, p. 388). In this section I now address the factors that appeared to contribute to declining internet use.

¹⁸ Note, as before, that the term 'community ICT' is used rather than 'community internet' where cited authors prefer the former. Refer chapter 1, page 10.

Broadly, the results of the study overall showed that e-mail was popular, and social goals in using the internet were most highly valued. Some evidence exists in the findings to suggest that time spent using the internet began to displace other social activities such as talking on the telephone and spending time with friends; however the sample size is too small for this inference to have any real weight, especially in view of the emphatically-argued point in the current literature that internet use is not impinging on sociability, and the number of social relationships enjoyed by internet users is actually greatly expanding.

Yet evidence is also present that appears contrary to the social displacement findings. Specifically, although displacement of social activities appeared to occur as noted above, the types of individuals involved in Computers in Homes at Case A and Case B nevertheless remained sociable, and two examples are useful here. **Participant B15** clearly loved the social aspect of using the internet – the online chat and email especially with international contacts, and yet this did not appear to have eroded his day-to-day dealings with people in his neighbourhood. Likewise, **Participant A25** was very much ‘networked’ both online and offline as is evident wherever she is mentioned in chapter 4. Both Māori, these participants probably reflect the emphasis on the oral tradition in Māori culture, as well as *whanau* (extended family) and collectivist cultural traditions. For these reasons, in chapter six I suggest that providers of free internet who aim to enhance social cohesion in settings such as those in the present study might consider the value of public internet access points such as in public libraries, where individuals who enjoy socialising can use the internet and be socially supported at the same time. Since this research was completed, it appears Computers in Homes is considering such a development to add to its household-based activities (D. Das, personal communication, 23 November 2008). On the whole, the groups studied for this research showed a propensity towards preferring the social aspects of internet use and therefore would be receptive to embedding it into their lives for these purposes, an encouraging signal for those who would wish to see free home internet access improve people’s ability to develop what the policy discourse calls “social connectedness” (Ministry of Social Development, 2006).

This section on internet use in the low-decile setting begins with the range of challenges to ongoing internet use within a community group, followed by reflection on how both existing and latent community capacity – specifically, social support networks and social cohesion dynamics - may be harnessed to improve continuity of internet use.

5.1.1 DOMESTIC TRANSIENCE

Changes in society since the widespread use of the internet became apparent around the end of the 1990s are relevant here. Copious research led by Barry Wellman over the last ten years under the auspices of the University of Toronto's NetLab shows that people now function as networked individuals ("Connected lives: The new social network operating system," 2009, online broadcast). According to this societal paradigm shift, we now manoeuvre among our various loosely-knit networks, and social ties and events are more organised around the individual rather than a social unit such as the family or household (ibid.). In this sense, shifting household structures that may look like 'transience' may in fact reflect a loosening of traditional social units facilitated by people's use of technologies like mobile phones. These enable person to person contact to supplant place to place communication, and thus the individual is now the organising unit, not the family or work group (Wellman, 2009). From this perspective, the following discussion of shifting household structures may be understood differently, as simply a fact of life in the networked society.

The mobility of families in the Computers in Homes sample of new internet users appeared to play a role in the degree to which programme implementation was successful in each case. As shown in the results (section 4.1.2, page 152), the drop-out rate from Case B was far higher than Case A. Factors set out in Chapter 4 on domestic transience relate to conditions in low income communities where households often struggle with financial problems, unemployment, and other issues causing family strain such as simply providing for the needs and demands of shifting extended family groups in crowded conditions. For **Participant A25**, the garage of her house was a bedroom housing several people. Yet on the other hand, **A25's** role as something of a matriarch with an extended family network coming and going through her home could be viewed as an effective means of exposing more people to computers and the internet, in just the way envisaged by Computers in Homes. In chapter 4 (section 4.1.1, page 135) it was reported that **A25** was happy to see many people using her computer – "the computer's always in use". This is surely a good outcome.

According to ministers of the Labour-led Government in 2001, although there are "no official measures of poverty or deprivation in New Zealand", the excluded are

...Unable to participate and belong to society. This may be because of financial hardship, poor health, crowded and poor housing, unemployment, and poor education... Importantly, many of these social issues are inter-connected. For example, crowded housing may lead to poor health that may in

turn make it harder for a child to do well in school, or hinder a person's ability to work. (Clark & Maharey, 2001, online)

This view of deprivation echoes the idea cited in the literature review that exclusion is complex, consisting of joined-up problems (UK Cabinet Office, 2008) that may even create a "silent community" (Ganesh & Barber, 2009, p. 851) of individuals whose experiences and voices may remain unrepresented. With pressure occurring in one area of family life, such as unemployment and financial hardship, this in turn may create pressure elsewhere and exacerbate people's reticence about engaging with authorities such as schools, health care workers and government officials because of differences in cultural capital (Perry, 2004, Introduction). A point from the literature review should be recalled here too, however - that these perspectives tend to highlight what may be lacking, in a "deficit theory syndrome" (Forrest & Kearns, 2001, p. 2141) or a "deficiency-oriented social service model" (McKnight & Kretzmann, 1996, p.1) in which communities are "noted for their deficiencies and needs" (ibid.) and therefore are seen to lack certain resources or exhibit less robust processes, rather than actually having assets. One strong outcome of the present study is that it highlights the potential value of existing social cohesion, with its social and community capital and overall community capacity (refer to Figure 2-2, page 65) that should therefore be recognised and harnessed. This study shows that such a process, in contrast to merely identifying the deficiencies, can facilitate worthwhile outcomes for the community.

Nevertheless the day-to-day household situations of the families involved in my research revolved around shifting and re-forming family groups, unemployment, overcrowding, hardship, and reluctance about making use of Computers in Homes training, or to ask for any help especially with technology problems. In the literature review in Chapter 2, in a section concerning social inequity and the digital divide, I pointed out that previous research (Chatman, 1996) has highlighted the unwillingness of the information poor to approach "insiders" – officialdom, or information rich – for help, preferring to keep their needs and problems to themselves. A New Zealand study (J. Williams & Sligo, 2002) showed evidence of this in a tendency of the information poor to have an internal locus of control (Rotter, 1966). The results from the present study regarding barriers to internet uptake echo so-called "self-exclusion" issues (Doherty, et al., 2003) in home internet use that can "restrict initial adoption and also restrict more extensive use of the internet by those that do have access", including "lack of support networks or inappropriateness of available support; ... protection of the self: perceptions of security and privacy" (Doherty, et al., 2003, p. 2).

A tendency to avoid admitting to problems, a preference for managing by themselves, and wariness towards school and authority figures is evidence in the present study of characteristics that arguably undermined people's motivation to use the internet. Doherty et al (2003) also draw attention to the fact that, as argued in Chapter 2 of this thesis,

...in much of the literature there is an assumption that access to computing and the Internet is a universal desire and it is mainly a problem of resources, either educational or financial, that are holding people back from Internet use (Doherty, et al., 2003, p. 3)

However this 'holding back' is in fact about something more subtle. It may be that once the access barrier is removed, as in Computers in Homes where internet access is provided, it merely reveals more clearly the other barriers that already exist.

5.1.2 INTERNET TRANSIENCE

It may be inferred that limited internet uptake among the participants overall in the present study was related to household dynamics as discussed in the section above. Given the level of domestic transience among the participants in this research (shown in section 4.1.2, page 152), the conditions for establishing ongoing internet use within a given household were not ideal. Where extended family groups are somewhat in a state of flux then maintaining long term internet use, such as through using a Computers in Homes computer, is likely to be problematic. Since I did not set out to assess such a link on internet uptake and its relationship with household characteristics in this research, however, definitive conclusions on that inference are not possible.

Nevertheless the process I describe as internet transience was a feature in the study. I use the term to denote an ebb and flow in internet use, and the sense in which internet use could be intermittent or even fleeting, and then be abandoned. Other terms have been coined but they seem inadequate to describe what emerged in this study. Anderson's term, churn (2004), describing fleeting internet use, has some relevance to the findings in this study, and although it is more correctly a marketing term used to describe stop-start internet use within a target population of consumers, it has some applicability. Norris used the term internet poverty (2000) which could broadly describe the life-world of participants in the Computers in Homes study. While it is not directly defined, Norris cites Kofi Annan's warning in 1999 of "the danger of excluding the world's poor from the information revolution in the wired world" (ibid.,

p.5), and thus to this extent Norris's term denotes a state of hardship or deficit. She alludes to a meaning for the term in citing Annan again, as follows:

People lack many things: jobs, shelter, food, health care and drinkable water. Today, being cut off from basic telecommunications services is a hardship almost as acute as these other deprivations, and may indeed reduce the chances of finding remedies to them. (Annan, cited in Norris, 2000, p. 5)

In using this analogy, Norris implies that internet access is a basic requirement for human survival, almost in the same category as food and water.

In a rapidly evolving field of study that regularly coins new terminology it seems appropriate to make use of the words internet transience, as I do, since they denote an observable phenomenon: once online does not mean always online. Internet transience implies a dynamic process, a state of flux rather than a state of being. This is an extremely important principle in the digital divide context where all too often the rationale "ensure access and use will follow" (Novak & Hoffman, 1998, p. 10) continues to prevail. Results in the present research clearly show this is not always the case, and where free home internet is successful, this may be contingent on the presence of supportive social networks. Internet transience did not occur in all families, but the coming and going and easy relinquishing of the internet was a significant feature. The most obvious evidence is in the sample attrition (refer chapter 4, section 4.1.2).

Many different factors contribute to this 'internet transience' dynamic. These are now addressed in terms of barriers to internet use; features shared among the more active internet users, and characteristics of the less active; ways in which internet use was integrated into everyday life; and finally evidence of churn (Anderson, 2004).

- BARRIERS TO INTERNET USE

This study has comprehensively detailed the ways in which internet use in a household setting is inherently complex, potentially problematic, and intrinsically bound up in complex relational settings. Two principal actants (Ryder, 2003) in the digital divide context are the individual and the hardware. However, as findings in the present study have shown, other actants including Computers in Homes facilitators, school personnel including IT support staff, and networks of household members who may come and go, should also be considered to be part of the context. Large households including grandparents, other extended family members and friends create complex networks of interactions with the technology. Therefore when other

barriers like illness, financial and employment difficulties, or anxiety about internet use are overlaid, the “socio-technical system” (Silverstone, 1994, in Couldry, 2004, p. 2) can become strained.

In the present study, conditions that appeared related to less successful internet uptake included the need for many families to have regular hands-on technical support, low motivation of some individuals to make use of the internet, and limited ability to conceive of the way in which the internet can be used. The last feature was seen in a small number of individuals who lacked understanding of how to search for information as well as a sense of purpose in using it. One interviewee who comes to mind as an illustration is **Participant B20**, a recently unemployed father with one primary school aged daughter, who said he wouldn’t miss the internet if it vanished overnight (interview question B3), had never used it to search for a job, and felt that it would be more relevant when his daughter gets to high school. In explaining why he wouldn’t miss the internet (where he agreed his daughter would – “she’d be gutted”) he said

Probably cos I don't use it that much – you know unless I wanted to go and have a look at what I want to look at like the V8s and all that sort of thing but I don't do that very often and I'm only doing it cos I'm bored...you know yeah I prefer to get out the Playstation – have a go on the Playstation – that's me.

Put another way, people have to be able to imagine what the internet can do for them in order to feel motivated to use it. An assumption on behalf of school staff and providers appears to be that once the internet is accessed at home, it becomes inherently interesting and new users can teach themselves how to make use of it intuitively. Principals interviewed for the study expressed the view that parents should lift their aspirations, and expand their horizons through internet use. Results in this study showing a level of low motivation in this way suggest that families selected for Computers in Homes are likely to need effective support to ensure that real engagement and self-direction develops. This point contributes to recommendations presented in section 6.1.1, page 255.

The need for technical support is certainly addressed by Computers in Homes as far as possible, for example by providing not only basic training to Computers in Homes participants at the start-up phase, but also a technician at each school site who is available at certain hours, guest speakers or special topics at regular Computers in Homes meetings, and instruction manuals made available on the website. Additionally, peer mentors are identified, and in the present study were very visible at Case A (for example participant **A4**).

However despite these provisions, some individuals do not avail themselves of them; for example attendance at parents' meetings and training sessions was often sparse. Whether this is a factor of personal motivation or interest, or as mentioned above, a limited ability to enter a new cognitive realm or imagine how to apply it to their own particular needs or aspirations would require further research as it was not specifically addressed by this study, but rather arose as an observation. Another possibility is the sense of 'buy-in' experienced by parents, for

The objectives of ICT initiatives must be aligned with the goals of the host community: if they are not seen as relevant; they will wither away regardless of assets. The tensions between the goals of an exogenous ICT intervention and differing ambitions of the host community may lead to difficulties in sustaining engagement. (Gaved & Anderson, 2006, p. 23)

Gaved and Anderson (2006) go on to argue that "rather than a technologically deterministic 'build it and they will come' model" (ibid., p. 23), a process of negotiation is required as the basis of engagement. It may be that in school settings this does not always occur, or the process of resolving shared goals and commitment is less than complete.

Low motivation is a feature I noted among about one quarter of the whole research group: the computer and internet was a 'take it or leave it' option of little particular interest. The ordinariness of computer-mediated communication (CMC) technology as just another media product competing with all the others in a typical busy household has been noted by Herring (2004). In chapter 4, section 4.1.2, the way in which the Computers in Homes computer often sat alongside arrays of other media technologies was described, with wide screen television sets, set-top boxes and gaming consoles being typical focal displays in living rooms around which the furniture was arranged for the best view. One participant referred to the computer as "just another gadget", bringing to mind this prevalence of cheaply available media products in the homes, and hinting at a relative lack of value attached to any of them in particular.

It seems to me feasible that a combination of the above factors is at work, and may over-ride the issue of internet access for some families. Kubicek (2000, cited in Doherty et al, 2003, p. 3) believes a "major barrier [is] perceived inability to use" because

The cognitive demands needed to search, navigate and interpret written information are novel skills for many users. That so much of the Internet is text based is important, many people are diffident about reading large amounts of complex text, especially on a screen and may not possess the background knowledge to evaluate the quality of the information given to them. This, Kubicek argues,

is not a problem that will solve itself but is a huge challenge for the more widespread uptake of the Internet. (Doherty et al, 2003, p.3)

This is a speculative explanation for the evident lack of interest of some research participants in the present study, for aspects of digital literacy were not specifically assessed. However it is worth considering in light of the possibility argued by Doherty et al (2003) that self-exclusion issues “that restrict initial adoption and also restrict more extensive use” (p. 2) may be present at the start-up phase of a scheme like Computers in Homes. Loss of interest was a factor in this research, based on information about returned computers, and families simply not being involved after the first few months of Computers in Homes. The latter feature could be explained by the fact that after the first six months of free internet, families are expected to pay for it themselves. Yet it seems likely that even those who lack confidence with technology could be motivated to take direction from opinion leaders in order to become proficient. At Case A, those leaders (who appeared prominently in chapter 4, for example, participants **A3**, **A4**, **A25**) were associated with a much more successful uptake of the internet than at Case B.

The need for technical support certainly directly affected a minority of the group who remained uninformed about the basics of connecting to the internet with dial-up. Yet comments made by school and Computers in Homes staff reinforced the conclusion that some parents were sensitive about being thought incompetent with the technology and for this reason were reluctant to admit that they in fact could not access the internet at all. School staff thought parents most likely felt that they would look stupid if they admitted they may have damaged the computer or done something to interfere with its normal function. They may have been afraid to ask authority figures. This is clearly a critically important barrier for Computers in Homes schools to address. Chatman argued that a strong characteristic of the “impoverished life-world of outsiders” (1996) is their unwillingness to talk about problems and seek help from authority figures.

A case in point is **Participant B23** (refer section 4.3.1), a woman in her 60s who cared for young granddaughters. It was apparent that while she understood in a rational sense that she should be familiar with the new technologies in order to better care for the girls, she was nervous about the risks of the internet and had a vague sense that it represented a threat. She kept the computer in a closed front bedroom so that visiting children could not play with it (arguably the opposite of what Computers in Homes aims to achieve) and risk damaging it. In this room the computer was so far from the telephone jack that the internet cable would not reach for dial-up networking. She had not contacted the school about this and the school did

not appear aware that she not only remained unconnected but was rather afraid of doing anything about it. Clearly this family was ideally placed to benefit from the Computers in Homes scheme through the internet supporting the children's learning within an environment where the grandmother could also learn with the children. Yet these individuals needed careful one-on-one instruction and regular home visits, arguably true of the majority of the research participants.

Home visits would be a worthwhile strategy to consider, especially in view of the likelihood that in exogenous initiatives such as Computers in Homes, funding for IT training and support will be "formally designated only for a limited period while funding lasts ... but both exogenous and grassroots initiatives assume the host community will take on this role informally in the future" (Gaved & Anderson, 2006, p. 17). As a result of observation it seems to me that many more homes could have benefited from regular scheduled technical or educational support visits, an issue noted as "an essential requirement for any grassroots ICT initiative" by Gaved and Anderson (2006, p. 23). While in theory each Computers in Homes school provided a technician who was available to parents for technical queries, problems and elementary training, in practice such staff were extremely busy, and many parents appeared shy about approaching the school. In this regard, a worthwhile model to consider for broader application in Computers in Homes could be the "Home School Liaison Personnel" (HSLP) employed in the Flaxmere Project where Computers in Homes is part of a larger community intervention package (Perry, 2004) to help create an educational partnership between homes, Computers in Homes and school. Such an arrangement could address technical issues as well as encourage learning about new ways to use the internet, all the while developing the rapport necessary to handle issues of confidence or embarrassment if they appeared relevant. Rideout and Reddick (2005) argue, using data from research in Canada, that because "local organisations are delivering community and government services to citizens..." (p. 59) and that these are "public services providing general social and individual benefits... [therefore] there is an obligation to use public funds to support these" (ibid.). The results of the Computers in Homes study suggest that this argument about funding of adequate support being a responsibility of governments also applies in New Zealand.

- INTERNET HIGH-CONNECTORS COMPARED TO INTERNET LOW-CONNECTORS

Given the research goal in this study of assessing the relationship between internet access and use, and evidence of social cohesion, it is possible to see a relationship in the results of the study between the more engaged internet users and behaviours associated with individual

level social cohesion. Among these behaviours are social connectedness, including interaction with friends and family. In chapter 4, results relating to participants' internet use revealed that some were more engaged internet users (high-connectors), and some were less so (low-connectors). High-connector participants in the first phase of the study appeared to be much more sociable, more confident and talkative in the interviews, with interview transcripts showing the greater detail of their answers, interspersed with anecdotes that were generally absent from low-connector responses. These features echo the characteristics of opinion leaders in section 2.1.1 (page 28).

On this basis it could be inferred that a predisposition towards enjoying engagement with people generally is related to higher levels of internet connectedness. Kiesler et al (2001) had made this point that "using the internet generally predicted better outcomes for extraverts and those with more social support but worse outcomes for introverts and those with less support" (p. 2). The internet is a tool for amplifying what people already enjoy, an inference that aligns with empirical studies providing "substantial evidence that people who connect to the internet are more likely to use it for cultivating their social and cultural proclivities" (Matei & Ball-Rokeach, 2002, p. 405). Loader and Keeble (2004) make a very similar point, saying "those who are socially content, trust others, have lots of people to draw on for support and believe that others are generally fair, are also more likely to be wired" (p. 29). The findings about high-connectors in the present study, having ready support in the literature, also point directly to the larger finding of the study that internet use and further social cohesion accrued much more significantly to Case A, where social cohesion was more evident in the first place. This outcome is evident in the results shown in Table 4-2, page 152, where it is clear that the majority of those who remained actively involved in Computers in Homes at Time 2 were from Case A. While this may be coincidental, it may also be related to shared motivation or a sense of belonging to a committed group.

In the literature review, the principle that high-connector individuals become rapidly engaged in the social aspects of internet use was noted: it is thought that this occurs because "connectivity seems to go to the connected: greater social benefit from the internet accrues to those already well situated socially" (Wellman & Haythornthwaite, 2002, p. 28) and has now become more or less accepted in the field of study. An example in the present study is **Participant A3** describing the family's use of a cell phone: "D. usually goes away every second week on a Friday night and its good to phone at around 7 o'clock for the kids to say goodnight, so it's keeping the family connection there...saying goodnight to daddy is important for them." Most recently Wellman argues persuasively (2009) that now, especially

amid what he calls the “mobile access revolution” (created by the availability of wireless laptops, mobile phones and smart phones), personal connectivity to our networks is rarely something that happens in isolation. When people are e-mailing, for example, they are often planning to see that person face to face (ibid). In this sense, the high connectors in my Computers in Homes study are likely to be using their online interactions to maintain their offline relationships.

High-connectors are also substantial consumers of media generally, in particular television and radio more than print media (see section 4.1.1, pages 147 – 148). In this context, high-connectors may consume large volumes of a range of media products, of which the internet is one (Haythornthwaite, 2005). Additionally only three of the six high-connectors said they were reading the newspaper less, a somewhat inconclusive result but worth noting in respect of the displacement hypothesis – high-connectors may, after all, continue to consume a variety of media without abandoning some. Relatedly, opinion leaders are also heavy consumers of mass media (see section 2.1.1, page 28).

While high-connectors showed interest in knowing neighbours, an enjoyment of meeting them and a sense that it is easy to become friends with them, results for the low-connectors were similar. Low-connectors showed at least a predisposition towards being engaged with people. Where the two groups differed in regard to neighbourhood relations was the number of neighbours they knew well enough to talk to: high-connectors reported much higher numbers than low-connectors. Lower levels of confidence among low-connectors in interpersonal interactions may be implied here; if this is a trustworthy conclusion, then it again underscores the importance of the larger findings of the study, that socially supportive elements of a scheme such as Computers in Homes are vital in a situation where the equivocal technology context may further undermine low-connectors’ willingness to engage.

Conversely, Wellman (2009) argues that the internet fosters neighbouring. For example, many e-mails are actually local, and add to face-to-face and phone contact, rather than replacing them. In Wellman and Hampton’s Netville study (a ‘wired’ suburb in Toronto described on billboards as the “Smart Community”) in which a serendipitous research opportunity arose through Bell Canada’s decision to provide high-speed internet to a new housing development as an experiment, because only 60% of the suburb was included, a ready-made comparative study of internet and neighbouring was born. Survey data included clear findings that “wired” or online residents knew more people by any criterion than the non-wired. Those online knew three times more neighbours by name than the “non-wired”, talked

with them twice as regularly, invited them into their homes more and were in turn invited into neighbours' homes more than the non-wired. Furthermore, the distance between wired neighbours and neighbours they knew (measured in 'lots', or sections) was greater than the non-wired, meaning that wired residents have a larger neighbouring territory (Hampton & Wellman, 2003). Other research in Los Angeles suggests a relationship between attachment to local neighbourhood and the likelihood of making personal bonds online (Matei & Ball-Rokeach, 2002), so that internet high-connectors not only have a strong community orientation but will also contribute social capital to their online communities (Matei & Ball-Rokeach, 2002).

One caveat: in the present study where a high level of connectivity to online social networks was maintained or increased, the connectivity may paradoxically have been less about participation than observation from the sidelines. The 'real' social world of the research participant with the highest ICI rating, **A25**, appeared to shrink despite the access she had to an online community: she became absorbed in observing chat rooms, wanting to escape from the stresses of her everyday world, but feeling isolated as well. In addition, she could already be characterised as a highly sociable person to begin with, and so we might question what real benefit accrued in her situation as a result of internet use. Her response to one of four survey questions intended to measure contentment¹⁹ was noteworthy, as it showed she felt a loss of control over her life compared with the earlier interview. Shah, Kwak, and Holbert (2001) found that particular types of internet use

Emerged as significant predictors...specifically, people's use of the internet for social recreation (i.e. participation in chat rooms and game playing) was consistently and negatively related to their engagement in civic activities, trust in other people, and life contentment. (p. 149)

In relation to internet transience, low-connector parents were preoccupied with a range of family issues including the needs of young or unwell children, living in uncertain rental accommodation, adjusting to unemployment, juggling two jobs as well as young children, and other family matters. It's possible that household pressures like these may outweigh a predisposition towards social engagement generally, and erode either motivation or time available for using the internet. If low-connectors can be identified as promptly as possible, some appropriate form of support or intervention may help to maximise the chances that they establish a relationship with this medium that is meaningful and effective for them.

¹⁹ Derived from a study of the relationship between internet use and social capital (D. Shah, et al., 2001). Participants were asked to rate the statement "Sometimes I feel I don't have enough control over the direction my life is taking" using a 1 - 5 Likert scale. This participant responded 'disagree' in the first interview, but 'agree' in the second.

- EVERYDAY INTERNET USE

In sum, interviewees in the Computers in Homes research were characterised by enthusiasm towards the new medium, reporting a moderately to strongly positive effect on their lives at Time 1, but at the same time lacked conviction about whether the internet was really necessary. Only half reported that they would miss the internet if they woke up and found the computer had vanished. It may be that it was viewed as potentially entertaining but not vital to everyday life. However at Time 1, participants showed a moderate level of enthusiasm for e-mail, with two thirds of the group being regular users. Also reported in chapter 4 was the fact that social goals appeared important to the research participants. Both the enthusiasm for email and the valuing of social goals suggest that the aspects of internet use that can enhance people's social support networks in these settings would be favourably received, and should be emphasised, such as by ensuring everyone is able to understand and use social media applications that are now available (such as social networking sites), although they were not at the time the research was being conducted.

By Time 2, one third of the remaining interviewees were spending less time on e-mail; one third increased their e-mail hours. At this level the study appears to endorse the idea of a honeymoon period that gradually fades: a novelty effect has been found elsewhere, as users report a decline in the frequency of e-mailing (Horrigan & Rainie, 2002). This point is extended in section 5.3.1 later in this chapter.

- CHURN IN AN INTERNET USER POPULATION

Participant A9, described in chapter 4 as "Disconnected, but not by choice", is a good example of internet transience in this study. During the months she was using the internet, her use increased. When her remaining school-aged child moved to live with his father in another city, **A9** had to relinquish her computer to the school for another family to use, yet she could have continued to make effective use of her computer and internet connection, being motivated and excited by the possibilities these represented. Her story illustrates Merkel's "stop-start ... technology use" (2003) dictated by changed family circumstances and precarious finances, supporting the argument that "considering access as a one-time event fails to capture the churn in internet access and use" (Wellman & Haythornthwaite, 2002, p. 28). Wellman and Haythornthwaite also make the point that "discontinuance ... is a characteristic of late adopters, as are lower social connectivity, income and education levels" (Rogers, 1995, cited in Wellman & Haythornthwaite, 2002, p. 18). This view is consistent

with the suggestion that community internet schemes tend to have a life cycle. Yet although **A9** could not afford to buy a computer or fund an internet connection on her own, she may not remain internet poor in the long term, perhaps being motivated to save enough money to enable her to buy a computer of her own.

Internet transience could be viewed as analogous to the marketing concept of “churn” (Anderson, 2004), or turnover in a user population. Those who take up a new product - or technology - may not continue to use it, and this is a factor that should be taken into account at the implementation stage (J. Williams, Sligo, & Wallace, 2005). This point has been commented on in turn by Gaved and Anderson (2006) who remark that our view is consistent with diffusion of innovations theory. When extrapolated to the digital divide, innovations theory implies “it is important to recognise that there are ‘net dropouts’ as well as adopters” (ibid., p. 23). Therefore multi-stakeholder partnerships aiming for community building benefits through internet access should be aware that being online is a relatively fragile process rather than an end in itself. Barriers and negative dynamics as listed in the previous sections that may erode motivation must be quickly recognised and addressed, so that social cohesion may be harnessed and / or developed.

An article reporting on the present study (J. Williams, et al., 2005) has been cited by Gaved and Anderson (2006, p. 23) for recognising that internet connectedness is an unstable process, with many users reverting to no connection at all. Gaved et al were also interested in the article’s discussion of generational implications of the digital divide. Although there may always be individuals and sectors in society who are “resistant in the uptake of a new technology” (J. Williams, et al., 2005, p. 55) we have also suggested that a new generation of technology consumers dubbed “digital natives” (Prensky, 2001) may more readily accept digital media in their lives. The older generation of “digital immigrants” (ibid.) may be the resistant ones. Gaved and Anderson comment that despite our consideration of this factor, “digital exclusion may not diminish as time moves forward” (Gaved & Anderson, 2006, p. 13), arguing that exclusion is not limited to the older generation (Broos & Roe, 2003).

5.1.3 TOWARDS ENHANCED MENTORING

Peer mentoring, whereby more computer literate parents mentor the less skilled, is already a feature of the Computers in Homes scheme. In the present study, the potential for problems with mentoring was observed. An example was **Participant A9**, the parent mentor (section 4.1.2, page 153) frustrated in her efforts to guide another parent who had not understood

critical information about contacting an internet service provider. This type of occurrence creates the risk that someone who already has the knowledge and willingness to help others may feel less inclined to take such a role if it involves wasted effort. This may undermine the building of social cohesion evidenced in individual behaviours like commitment to shared tasks.

This phenomenon is noted by Gaved and Anderson who assert that while “the introduction of an ICT initiative can strengthen social capital within a community” (Gaved & Anderson, 2006, p. 23) it may also be true that the energies required of those involved “may ‘use up’ as well as create social capital” (ibid.). Thinking here of social capital as an important group level component of social cohesion, the networks of trust and reciprocity in society, then the instance of ‘using up’ social capital in my Computers in Homes study is worth noting because the aim of the scheme is very much to be a force for good in strengthening community. In terms of the goal of my research, to assess the relationship between internet access and social cohesion, then in this individual example there is the risk of a negative relationship. While it is argued in relation to social capital that “using it creates more of it” (D. Williams, 2006), it also seems likely that, overall, we need to regard social capital as something that needs to be managed with great care so that it accrues rather than dissipates. This risk of eroding social capital – such as through an attitude of goodwill towards others and willingness to help being damaged - should be anticipated in Computers in Homes implementation. Hands-on management by schools of the process of getting new internet user families up to speed, and particularly, the peer mentoring process and how well it proceeds for both the mentor and mentee, could help to minimise this risk.

In Chapter 4 (section 4.1.2, pages 151 - 152), a trend toward a loss of internet connectedness for six of the nine participants who remained involved in the research was shown. While Computers in Homes aims to foster internet use among needy families in school communities, in this study success in the endeavour was modest if a strict focus on ‘the numbers’ is maintained. Treating the internet connectedness data separately, it is possible to infer different *types of response* over time to the experience of home internet access. High-connectors who remain high-connectors could be viewed as, in a sense, an ideal, because that outcome is desirable from the provider perspective, while low-connectors whose use decreases or who drop out should arguably be identified quickly. While representations of these ‘types’ are few in a small sample, it is reasonable to suppose that such responses are within a normal range of home internet experiences. Such a categorisation of users resonates

with the view that digital natives do not incorporate the technology into their everyday lives “in the same manner and to the same degree” (J. Jung, et al., 2001, p. 509).

This concept of user types has some potential, explored in the final chapter. I acknowledge that the survey results presented in Table 4-2 (page 152) are a reductive tool for collecting data on the internet connectedness component of the larger research goal, and any model inferred from them should be used with care in a qualitative study. Researchers are warned to exercise caution in interpreting results, “to avoid creating things that are not really in the data” (Patton, 2002, p. 459); yet two observations can be made here. First, as Valerie Janesick (Denzin & Lincoln, 2000) points out, qualitative design “sometimes requires that the researcher develop a model of what occurred in the setting” (p. 386) so that the model becomes a heuristic “tool for further work” (ibid.). Thus within these strict limitations, the internet connectedness data are useful for suggesting that my ‘hunch’ expressed in Proposition 1 - free home internet access leads to ongoing internet use - has not been supported. In this way, the use of a quantitative instrument constitutes Janesick’s “tool for further work” (ibid.) within the larger study. For now, a way for the survey data to be used to strengthen Computers in Homes is discussed.

Data describing the final nine participants showed (refer Table 4-2, page 152) that to an extent ‘types’ of user are identifiable, such as the highly-connected individuals who remained enthusiastic at Time 2 (**Participants A3 and A25**), the highly connected whose use declined (**Participants A1 and A6**), low-connectors whose use declined (**Participants A4 and B24**), low-connectors whose use increased (**Participants A9 and B13**), and low-connectors who stayed that way (**Participants A4 and B24**). Reflecting creatively on these types leads to a potential solution to the question of retention: users who maintain or grow a high level of enthusiasm for the internet could be ‘buddies’ to those who appear to be having difficulties or who seem less able to envision how to use the internet to expand their horizons. Thus the social support already available in a given setting could be enhanced by this means.

If the kinds of barriers discussed in section 5.1.2 are in any way typical of low-decile school settings, then those responsible for community internet interventions such as Computers in Homes could look to social networks already present, and seek to facilitate new ones, to develop better support systems. Community is “a pre-eminently social phenomenon” (Wellman, 1999, p. xiv), so if internet access is intended to be a means of building social cohesion, social networks whether already available or latent should be reinforced as much as possible. In this way, in a scheme like Computers in Homes, the chances of ‘at risk’ families

keeping up their internet use and access to educational opportunities may improve. A range of informal means already exists in Computers in Homes through which de-motivating factors such as technical difficulties should be able to be addressed. These include family meetings at the schools, ideally provided twice a term, for support, instruction and discussion; and the provision of technical assistance. The level of support received by families appears to be critically important to the long term outcomes.

Effective support mechanisms require a good deal of time, money and dedication to set up and maintain. School personnel in particular face the day to day demands of handling technical problems and project management (planning parents' meetings, training, integrating Computers in Homes with overall school ICT strategy) as well as keeping families motivated and involved given that the parents are most likely educational underachievers. Loader and Keeble (2004) highlight the magnitude of barriers for participants with a history of low educational achievement, such as the location of technical assistance (in this case, schools) and the very idea of 'training' which may replicate earlier negative feelings of failure in the educational setting.

- USER TYPES, AND A POSSIBLE APPLICATION

A system for identifying those internet users who are increasing, maintaining, decreasing or abandoning their connectedness early in a scheme like Computers in Homes may have merit. It is important that scheme implementers find ways to minimise the proportion of participants who become non-users, or whose interest wanes or remains minimal. One important way to address the needs of the latter type of Computers in Homes participant is to put more emphasis on peer mentoring, which could be achieved if a closer watch was kept on individual users, either through a 'Home School Liaison Person' (Perry, 2004) or by building up the support relationships between enthusiastic users, and those who are less so.

Participant B16 showed concern that her child was not using the internet in the way he should; others such as **B23** and **B24** were anxious about the dangers of the technology now in their homes. In the context of literature on opinion seekers and opinion leaders (section 2.1.1, pages 27 – 28) such low-connectors would benefit by association with the confident leader figures in a buddy or mentor capacity. The presence of opinion leaders was evident both in individual behaviours and the outcomes of their collective activities in Case A (refer to section 5.3, pages 237 – 238), but not in Case B.

As shown in the sample attrition results in section 4.1.2, a large proportion of the original group of families who decided to join the Computers in Homes scheme at the beginning of the study either dropped out, or were difficult to contact, or both. These sorts of issues are challenging for schools to manage with limited resources and personnel; therefore support mechanisms that may be latent should be identified and used. A hint of the possibilities here was seen at one school site which, at one stage, invited more skilled Tongan parents to lead a training session at the school for other Tongan parents who lacked the confidence – and perhaps the language proficiency - to ask for help through official channels.

One use for a survey tool like the Internet Connectedness Index is that it can identify where “specific interventions are necessary for certain groups of people” (Ball-Rokeach, et al., n.d., p. 530). A system such as the ICI rating could be considered for use as a diagnostic tool to assist project implementers, a recommendation made in chapter 6. When reflecting back on their early weeks and months in Computers in Homes, parents at Case A noted in 2005 that they had felt their own training and support in 2003 had been inadequate, but that they were very motivated - now that they had personally experienced the advantages of being internet users - to be buddies to any new families who joined the scheme in the future.

Computers in Homes school staff members should be able to make informed assessments of parents’ response to the internet, especially those likely to fall by the wayside. These participants could be paired up with high-connector buddies at meetings or home visits to talk over technical or other problems. The aim of such communication is to foster motivation, hear what others are doing, be advised, be supported, and by doing so to build cohesion in both online and offline spaces. One proviso is that if this particular approach to user types is adopted, care would need to be taken in pairing up the right people. Mentors can have the best intentions but be frustrated if communication with the mentee is problematic.

5.2 SOCIAL COHESION

In the present study, with results showing a high sense of life satisfaction already present among participants as well as a moderately high level of trust and inclusive attitudes (see section 4.2.1, pages 176 – 177), social cohesion could be said to be already well established at the beginning of the research. This is consistent with the view expressed in the literature that ICT initiatives “may not generate social capital across the community” (Gaved & Anderson,

2006, p. 9) based on 2002 research results that suggested “social capital may turn out to be a prerequisite for, rather than a consequence of, computer-mediated communication” (Kavanaugh & Patterson, 2002). If this is the case, conditions were present in this study that could lead one to expect keen uptake of the internet.

A second point about social cohesion at the start of this study is that, contrary to expectations, a sense of neighbourly pride was not undermined by a relatively mobile population. People may not have lived in the area for long, but they were attached to it and identified with it. Ball-Rokeach, Gibbs, Hoyt, Jung et al (n.d) argue that there are significant positive effects for community attachment with the length of time in the neighbourhood, ownership of houses and distance travelled for work or daily life. In other words, length of time as a resident is critical in community belonging. Yet findings in the current research in respect of networks of mutual support, including owning versus renting a home, and views on the likelihood of leaving the neighbourhood, are somewhat at odds with the view that “physical rootedness has been found to positively affect community attachment...” (Ball-Rokeach, et al., n.d. Appendix, p.5). For example, about one quarter of the Time 1 research participant group was travelling between 10 and 20 kilometres or more to work or for daily life activities, with the bulk of the remainder, or three quarters, travelling up to 10 kilometres. This significant “boundary spanning” (ibid.) activity, to some extent typical in a large commuter city, “may increase a sense of connection to a larger area, rather than the physically rooted residential area” (ibid.). Yet if this is the case, a sense of the larger Auckland city area does not appear to have diminished people’s attachment to their neighbourhoods in this study.

The two-level framework for researching social cohesion used in this study originates with Friedkin (2004) who, as explained in chapter 2, argues that group level conditions and outcomes associated with social cohesion are prerequisites for individual level behaviours that characterise social cohesion. The group level conditions were evidenced in two principal ways among the study participants, as follows. First, the school context itself where Computers in Homes is made available provides a supportive group environment. Second, Computers in Homes is a community internet intervention scheme structured on positive social experiences such as regular meetings with shared food and guest speakers; Friedkin, too, points out that “if there is a beating heart in the field of group dynamics it is nurtured by the idea that positive interpersonal interactions are at the foundation of social processes” (p. 417). In Computers in Homes, participating families are required to attend monthly meetings, during which time they are intended to learn from interactions with other parents and the trained professionals on hand. On the whole, principals felt that parents and children attending meetings was a

critical part not only of creating the Computers in Homes community but also breaking down perceived barriers between families and school. An illustration of this process at work is in the description of a typical Computers in Homes meeting at a school in section 3.1.1 (page 86).

5.2.1 SOCIAL COHESION IN EACH CASE

The school setting at Case A along with the Computers in Homes emphasis on socialisation arguably fostered positive internet attitudes and behaviours among the researched group, such as those seen among families attending Computers in Homes events, in evidence of peer mentoring and the group mobilisation to keep the scheme going. Thus the success of the internet intervention at Case A appears related to the fact that it was 'bedded in' to a fertile social context that helped it flourish and in turn strengthen social ties.

Social cohesion, as it features in the aim of the present research, appears to have a relationship with the presence of influential individuals who have been described as technology opinion leaders (Vishwanath, 2006) in the diffusion of innovations in which "interpersonal contacts are especially important for new communication technologies" (p. 3). By this definition cohesion was not so evident in Case B where social networks were not so strong, while in Case A certain group members were influential, and mobilised to direct the fortunes of the group. Vishwanath's key point is that social influence, as embodied in the relationship between opinion leaders and opinion seekers, is more effective in a cohesive setting. This hypothesis appears to be borne out in the results of the Computers in Homes study where the presence of both of these coincided in Case A.

The Computers in Homes scheme aims to "empower low socio-economic communities" ("Computers in Homes ", 2007). While this aim is not explained further in terms of how that community empowerment will be recognised when it is achieved, it seems to me fair to infer that where conditions of low educational achievement and social exclusion exist that some appreciable difference will be made by the Computers in Homes intervention. From my years of research at Computers in Homes sites, mixing with staff and being exposed to Computers in Homes culture such as can be discerned through reports and information on the website, the sort of difference Computers in Homes is looking for is generally the detail at family level - families being able to e-mail, children being able to do internet research and thus "produce results on a par with others" ("Computers in Homes ", 2007), and an overall sense that parents in particular are excited by the potential represented by their internet access (ibid.,

Achievement and Benefits section). The difference sought by Computers in Homes is an intangible one, although documented to a limited extent via parents' anecdotes on the Computers in Homes site.

Housing New Zealand (HNZ) also has goals relating to community building: the government's housing agency "encourages communities and agencies to work together to identify and prioritise projects that will lead to strong, sustainable communities" (Housing New Zealand, 2008). Furthermore, "housing is more than building houses: it is as much about building community as it is about people's homes" (ibid., NZ Housing Strategy – Foreword). Now as explained in chapter 3, in the background on Case A (section 3.2.1), HNZ had a role to play in the implementation of Computers in Homes at the school. HNZ was interested in a raft of 'joined-up solutions' for the community's 'joined up problems' as the social exclusion discourse has it, so Computers in Homes was one component of a variety of community renewal tactics in that neighbourhood. Thus the community-building ethos of HNZ was consistent with the community-focused goals of Computers in Homes.

As shown in the results chapter, the neighbourhood setting of Case A was characterised by several features of social cohesion such as supportive networks that, according to Hampton (2002) "encourage[s] place-based community" (p. 230). In this neighbourhood, the Computers in Homes scheme was, initially, launched as part of the work of the Housing New Zealand Community Renewal project which was housed in an ordinary domestic dwelling. During my research it was clear that meetings such as one held to plan Computers in Homes and others such as the local community group, along with other events made this house a hub of community activity and participation. This HNZ facility could be described as an "institutional opportunity for social contact" (Hampton, 2002b, p. 230) where groups met over tea and shared food for various meetings, that was one important element among several at Case A that encouraged the formation of local social networks. Hampton (ibid.) argues that research on neighbourhood common space and urban design has shown

The provision of neighbourhood common spaces increases local tie formation, stronger local ties, and higher levels of community involvement ...[and] planning advocates the use of neighbourhood common spaces, front porches and other design factors to encourage surveillance, community participation and a sense of territoriality. (Hampton, 2002b, p. 230)

Thus the free home internet service offered to some families through Computers in Homes, which includes meetings and training at the school, was set within a "neighbourhood where context [already] favours local tie formation" (Hampton, 2007a, p. 739) and a relationship

appears to exist between the internet scheme and increased social cohesion. Hampton's point (ibid.) is that where neighbourhoods already have resources and features "an interest in building community, with the neighbourhood context to back it up, are most likely to profit" (ibid., p. 740) from internet services. This was clearly so in the Case A neighbourhood.

Case A showed the positive outcomes of opinion leaders operating in a situation of ambiguity and uncertainty (caused by the unfamiliarity of the technology itself, the school restructure, and domestic transience) for a relatively cohesive group. While the nature of this case study research limits its significance in terms of a relationship between opinion leadership and civic engagement, the relationship is supported by other recent research (D. V. Shah & Scheufele, 2006). Evidence presented in chapter 4 showed at least four Case A research participants exhibited characteristics of opinion leaders. Shah and Scheufele (2006) suggest that civic participation leads to opinion leadership, and that opinion leaders "tend to seek out informational content on television, newspapers, and the Internet, likely as a way to maintain their environmental surveillance and structural influence" (D. V. Shah & Scheufele, 2006, p. 1). In section 4.2.2 in the previous chapter I assembled detail from **Participant A3**'s interviews that demonstrate her – and her husband's – strategic management of their household's media environment in a way that exemplifies the point made by Shah and colleagues, above.

While Lazarsfeld's two-step flow model of information dissemination is generally invoked as the source of the opinion leader model, it may have more relevance to previous eras of mass media. In the Web 2.0 era in which people have "instant access to diverse, copious information" ("Connected lives: The new social network operating system," 2009), it may be valid to challenge the need for opinion leaders. For example Wellman argues we need "no more two-step flow" (ibid.) because "people cycle between the Web and their social networks to exchange opinions and weigh options" (ibid.). However this assertion may be more applicable to technology-rich individuals than to people such as the participants in this research who often lacked confidence or motivation to use the internet.

Yet the classic two-step flow studies such as Robinson's (1976) investigation of voting in the 1968 US election afford insights that remain relevant, such as that "those who engage in conversations are more politically active" (p. 316). In civic settings such as those found in the present case study research, the process of collective community engagement was facilitated by conversation that was an outcome of Computers in Homes practice. An individual like **Participant A3** exemplifies the catalysing effect of networking and conversation both within her own life and in her effect on others, as shown throughout chapter 4 and in her interview

(Appendix 4, pages 269 - 276). Those who conversed at meetings and among themselves became exposed to the reassurance of experience and knowledge from those more confident. An emphasis on events and gatherings in Computers in Homes is therefore a distinct strength of the programme.

5.3 LEADER FIGURES AT CASE A

Results presented in chapter 4 at various points highlight the role played by several Case A research participants in being leader figures during the study, and who took up responsible roles in the running of Computers in Homes in mid-2005 when the research concluded. These participants were **A3**, the married couple **A4** and **A5**, and **A25**. Their willingness to do so meant that the scheme continued to flourish long after this time: in section 4.2.2 in chapter 4 the facts of this situation are summarised, and all four of the above parents feature. What made them stand out as key figures?

First, we saw in the results that they were 'high-connectors'. They were individuals who inspired others and acted as mentors where Computers in Homes parents were anxious about the technology. They were socially confident, even garrulous, and already networked. They were conscious of taking a valuable opportunity and running with it, to see where it could take them, a characteristic echoing Bourdieu (section 2.1.3) who allows that, despite the limitations of habitus and the larger forces of social reproduction, that certain individuals are able to have more agency because they somehow have what it takes to seize opportunities (evidence of this is provided in the results chapter, section 4.2.2). In this sense they seemed determined to leverage a better future out of the potential they could see in the technology, which in Bourdieu's terms is available to them as cultural capital from the education field.

We know from the literature review that opinion leaders are key figures in an equivocal technological context. They have confidence, they are more competent communicators, they have influence, and they turn to the media readily as an information source. They also have a readiness to publicly "individuate" (Misra, 1990, p. 3) or stand out from the crowd, a characteristic of all the leader figures at Case A, and especially **A3**, **A4**, and **A25**. Additionally, we can discern that their contribution to this particular purpose or cause (Computers in Homes) is likely to be one of a variety of ways that they mobilise. Postill (2008), as noted in the literature review (section 2.2.1), asks us to consider 'community' to be

a limited theoretical construct because it is not a static single entity. The 'leader' figures at Case A mobilise in support of many causes: **Participant A3** is highly involved in the school in kindergarten and other educational groups, **A4** was a Board of Trustees member and volunteer for Habitat for Humanity; **A5** worked at the school.

The observations of the Computers in Homes national coordinator are of interest. In a discussion with me she mused over what is reasonable to expect as a good outcome of Computers in Homes in any given setting. Her experience had taught her (in working with hundreds of Computers in Homes communities²⁰ over a number of years) that in any group of – say – twenty families,

You've got your 'stars' - one or two or three individuals who are great successes, who really engage with internet use and run with it. These are the sorts of parents like R----- [**Participant A4**, F---- [**Participant A5**], S-- [**Participant A3**], M--- [**Participant A25**] and others at Case A... Then there are the "moaners and groaners" – for whom there's always something going wrong, anything becomes an obstacle. Then there's the big 'lump' in the middle – families for whom there is some internet use, and the children at least get used to having a computer at home. (D. Das, personal communication, 23 November 2008)

Das's three categories have some relationship with those identified in this research as high-connectors, low-connectors, and those in between. Her terminology is a more intuitive, less structured version of the ICI ratings, yet it suggests Computers in Homes practitioners do make use of an informal user typology. It may be that the ICI can be used to sharpen up this process of identifying user needs and taking a more structured approach to managing peer mentoring, training, and meetings, a point to be concluded in chapter 6.

Indications are that social cohesion was related to free home internet at Case A. What confidence can I have that the observed effects on social cohesion were directly related to internet use? What was the evidence assembled? The evidence at Case A is in four principal aspects: first, volunteerism (**Participants A3 A4, A5, A25, A9** and others) beyond the ordinary expectations of belonging to the Computers in Homes parent community. Volunteering is a form of behaviour associated with civic engagement, which in turn is a feature of social cohesion. Second, commitment to a group goal established by the above participants from Case A: they wished Computers in Homes to continue for future families, and worked out a plan for how to achieve it themselves, showing commitment to a shared future. This type of collective mobilisation is a feature of a cohesive group. Third, they operationalised the shared

²⁰ The scheme is now established in well over 200 communities with which the coordinator would have had contact

goal by planning objectives such as two members of the group (**A5** and **A25**) agreeing between themselves to divide up the list of families and visit each address to collect unused hard drives for upgrading. Fourth, the Computers in Homes national coordinator reported (D. Das, personal communication, 23 November 2008) that these parents took on responsible roles such as training other parents (**Participant A4**), and the school coordination roles (**Participants A5** and **A3**, one at each of the school sites). Implications of these four types of evidence include a likely fifth aspect, further social cohesion which will accrue to the larger Computers in Homes group because of the activities of these individuals, such as stronger networks of mutual support.

While internet access and use does not appear to have a direct relationship to social cohesion – because the results show that Case A was already a community exhibiting neighbourliness, volunteerism, pride and a sense of belonging, irrespective of Computers in Homes – it may be that internet access offered to a relatively cohesive community like this one will be more successfully used because of the presence of strong networks and support.

5.4 SUSTAINABILITY IN COMMUNITY INTERNET

The findings in this study are highly consistent with the literature. Sustainability is an issue for investigation in community internet research worldwide (Loader & Keeble, 2004) because although large numbers of such schemes exist, continuity is generally problematic because of factors including transient populations, conflict over accountability, and the tendency for these schemes to be ‘outside in’ solutions imposed by well-meaning agencies. Further, McKnight and Kretzmann (1996) refer to “traditional needs-oriented solutions” (p. 1) that focus on deficiencies in the community with the result that

Many low-income urban neighbourhoods are now environments of service where behaviours are affected because residents come to believe that their well-being depends upon being a client. They see themselves as people with special needs to be met by outsiders. (McKnight & Kretzmann, 1996, p.1)

A consequence of this may be that disempowerment is heightened while a sense of agency is lost among those targeted by outside interventions. Gaved and Anderson (2006) focus especially on the importance of internet interventions originating with, or being owned by, the

community itself, sometimes known as a 'grass roots' approach. The issue of continuity, and the priority asserted for community ownership (ibid.), is reflected in the two Computers in Homes case studies at the centre of this research. At Case A where Computers in Homes participants themselves became actively involved in running the scheme, it seems hardly coincidental that it became more successful in the long term, as reported to me by the Computers in Homes national coordinator in 2008, while at Case B, the school principal kept the scheme going on his own energies with a few families at a time. The latter option for continuity is arguably rather more top-down. In its Digital Strategy 2.0 (New Zealand Government - Ministry of Communications and Information Technology, 2007), introduced in chapter 2, the New Zealand government added 'collaboration' as a vital fourth component in the previous "three enablers" partnership concept of content, confidence and connection (see Fig. 2-1 in the literature review, chapter 2). In this sense, the Computers in Homes research resonates with the recognition reflected in the Digital Strategy that people need to be involved in creating their own solutions.

Despite a variety of factors that worked against Computers in Homes achieving longevity in the present study, including a decline in internet connectivity, internet transience, and barriers to ongoing use, a striking outcome of this study was that the Case A community of parents took matters into their own hands. The evidence for this change was summarised in section 4.2.2 ('Social solidarity'), providing indications that a further phase in the life cycle of the project was developing after a number of barriers had been addressed. The life cycle idea is significant not only for preparing community internet practitioners to anticipate phases, but also for the way we interpret research findings, for it is "the stage in the lifecycle of the community at which data is gathered that will determine how successful the community appears to be" (Gaved & Anderson, 2006, p. 28).

In June 2005 at a Case A rejuvenation meeting, parents and school staff reflected on that period of time as confusing and disempowering. It was evident to me as an observer at this time that they had the impression Computers in Homes was poorly implemented when they joined the scheme. Training for parents was described as ad hoc and inadequate; tensions arose relating to personnel and responsibilities. Ultimately, HNZ withdrew its services as provider of Computers in Homes, relinquishing responsibility to the schools during 2004. The 2004-2005 period saw what was said to be much confusion over records, names of families involved, numbers of computers in circulation, and other administrative matters. Yet by the time of the June 2005 rejuvenation meeting that I observed, sufficient commitment to the value of Computers in Homes had re-emerged among the original parents that a group

collectively took ownership of the scheme, and this provided momentum for it to continue. Computers in Homes continues to thrive at this site.

The evidence discussed so far in this chapter implies a need for greater attention to be paid, in some community settings, to the 'nuts and bolts' aspects of community internet implementation such as a more coherent training package and more resources directed towards technical support and peer mentoring. However community capacity (see section 2.2.2, pages 64 - 65) appeared to have been growing at Case A, with the outcomes becoming evident at the meeting described above. A combination of people with different energies and strengths was present, including school managers, experienced parents and "project champions" familiar with Computers in Homes operations, were gathered. Case A parents as a group were finding resources and seeking to direct them specifically towards identified needs, for example better training for the next intake of new families, to be conducted by the parent group who wished better for the next Computers in Homes generation. I understood that this point in particular was a concern for parents who felt that when they were new to Computers in Homes in October 2003, they were confused by the involvement of Housing New Zealand, and the training was felt to be inadequate. **Participant A25** commented to me in her second interview that, in her view, there was a need for

Better communication...like calling frequently, like communicating with them one on one sort of thing...rather than being just like how can you say, being a boss and just sitting back and expecting people to call you – you've got to go out of your way just to make them feel more comfortable...that it's not their problem. "You got any problems? Want to talk about it?" Maybe it's just me but I would take it one on one.

Participant A25 went on to take an active role in collecting computer hard drives that were not being used, and other voluntary activities as part of the core group who wished to see the scheme continue.

5.3.1 COMMUNITY INTERNET LIFE CYCLE

Is it possible to discern a life cycle effect in a community internet scheme, in the pattern of initial user enthusiasm, the experience of a range of barriers, decline in internet use, and finally, signs of longevity? Highlighting the issue of sustainability, Gaved and Anderson (2006) note apparent life cycle effects in community ICT and go on to argue the importance of shared objectives in project implementation. In the present study, taking an overall view of both cases studies and all the participants, the Time 1 internet experience was largely very

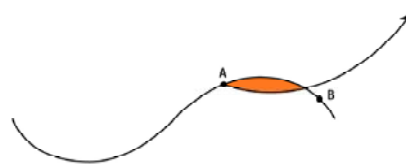
positive; a variety of barriers such as technical difficulties and user anxiety came into play; participation fell away across the whole group; yet signs were positive that the Computers in Homes scheme could be self-managing in the right conditions. Gaved and Anderson (2006) suggest that predictable phases are likely to occur along these lines, also citing Kubicek and Wagner (2002) that there is a “generational cycle” (ibid., p. 22) aspect to community networks, with an additional challenge that “in many cases it may not be clear just what it is that ought to be sustained”. These views are consistent with the results of this study, where at Case A, a complex dynamic existed by the time this research ended, with a range of ownership agendas at play.

Early benefits are said to be a feature of many ICT community initiatives (Gaved & Anderson, 2006, p, 15); elsewhere in the literature these are characterised as a honeymoon period (Ball-Rokeach et al., n.d., p. 5; Horrigan & Rainie, 2002), which implies a finite stage in which users are interested in a technological innovation. Evidence of enthusiasm for the internet, (section 4.1.1) was apparent in the first phase of the study, including not only e-mail but also other internet activities, notably looking for information, reading news, and playing games. This early flush of enjoyment and experimentation with a range of activities could be described as a “honeymoon” period if combined with the high attrition rate (section 4.1.2) which reduced the research sample considerably.

Time 1 of the study provided evidence of proud neighbourhoods in which many families took ready advantage of computers at home to maintain social networks with e-mail, as might be expected in the honeymoon period, more than they did so for informational purposes. After the honeymoon, as discussed in this chapter in the section on internet transience (section 5.2.2), progress stalled and numbers of active participants fell away. Finally, in this community that arguably had the most challenges to address, such as the school being reconfigured into two separate entities at different locations, signs of sustainability became visible in the form of parents taking charge. If the indications of continuity may be expected in the right conditions, a possible life cycle effect could be reassuring to project implementers, and one that could be built on.

It may be helpful to anticipate that a process like a community internet initiative has a predictable pattern of phases in this way, so that project implementation is not viewed as an end in itself, but a beginning. This could assist with effective planning and management of Computers in Homes for sustainability. Represented as a sigmoid curve, the life cycle concept implies the importance of engaging in ongoing assessment of progress towards goals, and to

have developed a new strategy, ready for the point in the curve where a growth phase appears to have reached a plateau (point A). Here, innovative thinking or a new strategy may be planned that will



determine the future course of the cycle: towards growth or toward decline (point B).

Continuous growth lies in starting a second curve before the impetus of the first one runs out, identifying point A in a timely manner. If this occurs there is a period of time (shaded, above) and resources (including impetus from the first cycle) that will assist in getting the next cycle started. In the present study, the inflection point is arguably the intervening period between Time 1 and Time 2 of the research. This can be pinpointed at around three to twelve months after the Computers in Homes launch, a time during which closer monitoring of issues, barriers and user responses could have produced new strategies to arrest the decline in connectivity in the group as a whole. This period of time is likely to be the most challenging in terms of retaining participants in any newly implemented Computers in Homes project.

Sustainability appears as an issue in the recent community informatics literature (Williamson, 2005; Gaved & Anderson, 2006) because exogenous initiatives are based on an expectation that “the new community networks will somehow become self-supporting” (ibid., p. 22), yet those expectations may not be realistic. Outcomes may also differ in relation to the extent to which the objectives are generated by community members, so that “exogenous ICT initiatives may be more at risk of failing after their funding has finished by comparison to grassroots initiatives” (ibid., p. 23). A life cycle effect was apparent in the present study, highlighting a need for project implementers to actively monitor this process. Where periodicity in a project is discernible, sensitivity in responding to the phases as they manifest themselves, and working towards a shared agenda with all stakeholders would be helpful in achieving project success and longevity.

5.3.2 OWNERSHIP OR PARTNERSHIP

The results of the study appear to highlight the desirability of active participation by the local community in planning and implementation of schemes aimed at community building.

Williamson approaches the challenge of sustainability as a process of achieving and enacting *partnerships*:

If resources are limited then sustainability is difficult to obtain. A solution to this is to encourage the sharing of ideas and resources and to support the building of partnerships that can offer sustainability.

Such partnerships can exist between community-based organisations, local government, central government and the NGO sector. Partnership is a key component underpinning the new Digital Strategy and is perhaps the best opportunity for individual communities to achieve effective solutions with limited resources. (Williamson, 2003, p. 6)

Participation, for example through peer mentoring, and careful devolution of responsibility, is most likely to lead to sustainable empowerment, creativity and innovation, whereas unclear ownership of the process in a more top-down approach may lead to a dissipation of momentum, as occurred at Case A for a period of time between mid-2004 and mid-2005. Yet over the long term, social cohesion centring on the Computers in Homes intervention appeared to have been building, and the goals of Computers in Homes and the school were being fulfilled. Future research may be able to resolve whether this social cohesion arose *because of* the difficulties of keeping Computers in Homes running, or *in spite of* them: did cohesion develop out of the adverse conditions, or as a reaction to them? This is related to the view expressed in the literature and cited previously, that “social capital may turn out to be a prerequisite for, not a consequence of, computer-mediated communication” (Kavanaugh & Patterson, 2002, cited in Gaved & Anderson, 2006, p. 9). Which came first, the social cohesion already embedded at Case A, or the struggle to keep an ICT initiative afloat, which in turn built more social cohesion?

Barriers to sustainability arose for a period of time at Case A because of unclear ownership of the Computers in Homes scheme and its implementation. Observation over the entire period from October 2003 to June 2005 at Case A produced the impression that the complexity of the school situation, caused by restructuring, together with the involvement of Housing New Zealand (HNZ), had created a lack of clear ownership of Computers in Homes. Housing New Zealand personnel took charge of the launch, training of parents, and running Residents’ Group meetings where practical aspects of Computers in Homes were managed. Confusion was caused by the presence and then the withdrawal - in late 2004 - of HNZ as the project facilitator, as well as the fact that it seemed to work to a separate agenda from the school. Consequences of the blurred ownership that became apparent later included a loss of records about the original group of Computers in Homes families, unclear accountability, responsibility and roles, and later still, problems in retrieving computers in order to re-launch the scheme with a new group in mid-2005. Much later, many of the original parents and school staff disclosed real frustration that so many problems had occurred as a direct result of these accountability issues. By early 2005, a little over a year since Computers in Homes was implemented, I sensed that the scheme had faltered to the point of being abandoned.

Commitment to an ongoing sustainable scheme was not achieved until parents themselves began to take charge in mid-2005.

- AFTER THE RESEARCH: ADAPTATION OF PRACTICE

In a later discussion with Dianne Das, the national coordinator of Computers in Homes, I learned that the above events at Case A informed evolving Computers in Homes practice. Das explained that the Housing New Zealand (HNZ) Community Renewal manager who was involved in implementing Computers in Homes at Case A in 2003 came back to Computers in Homes with a request to set up Computers in Homes in Otangarei, a community in the far North of New Zealand (D. Das, personal communication, 23 November 2008). Das observed that her reaction was it would have to be totally different – Computers in Homes would have to be completely in charge as project managers. At Case A, not only did it not work for the school community, it didn't work for HNZ either: for example, a HNZ Community Renewal case manager working in the area had had to do a lot of home visiting relating to Computers in Homes issues, which was not part of her HNZ job. This information aligned with my observations at the time (2004/2005) when Das and I had talked about how the Case A schools had not taken ownership of Computers in Homes, and that this needs to happen. Someone must be available at the school who can manage it. It seemed to me at that time that the 'project champion' at one of the Case A schools had been overwhelmed by this role in addition to her regular work at the school, and ultimately she had stepped back, not wanting to be involved. This is an issue that needs to be 'owned' by the principal and staff, and a way found to make it work so that someone is keeping track of computers, families and all the administrative detail, a process that unravelled at Clendon. So for all principal stakeholders in this case (the school/s, families, HNZ and Computers in Homes), the outcomes were less than satisfactory. Das commented that "this is what you get when agencies come in from outside and think Computers in Homes would be a good idea" (D. Das, personal communication, 23 November 2008).

Das met with the HNZ Community Renewal manager who was involved in implementing Computers in Homes at Case A about the new HNZ/Computers in Homes site in the far North, discussing the Case A issues. She observed that she was assisted in negotiating the new arrangement by the present study, the findings of which were familiar to her (D. Das, personal communication, 23 November 2008). The new HNZ/Computers in Homes collaboration was to proceed with 15 families. Das met extensively with the school prior to implementation; the school principal is "hungry for [Computers in Homes]" (ibid.), having read about it; an

enthusiastic staff member was to be on board, as well as a local HNZ Community Renewal manager, a local resident. The school chose the families. Das will no longer go into a school where she has only spoken with the principal; she will speak instead with the whole staff. HNZ is setting up a Community Renewal office (as was done in Case A), reflecting a desire for HNZ to be a central, visible and accessible community hub. HNZ is acknowledged for putting up the funds, but for example the school hosted the launch event. Training has been conducted at the school. The Computers in Homes organisation holds the money, and also project manages operation of the scheme (ibid.). Thus in this new Computers in Homes setting, HNZ has been quite 'hands off', instead supporting in the background.

As discussed in the literature review, while community internet schemes may arise out of the wishes of a host community or be driven by an external body, "there are partnerships between groups and it may not be clear-cut as to where ownership or control lies" (Gaved & Anderson, 2006, p. 6). My observation was that the endogenous interests became, if not subsumed by the exogenous interests, then at least very blurred by them at Case A. School priorities and objectives were much less visible than those of Housing New Zealand, Community Renewal and Computers in Homes (a scenario first explained in section 3.2.1); on the other hand, the local office of Housing New Zealand in one of the neighbourhood streets was a well-used and frequented community focal point. Nevertheless where multiple interests are involved, all agendas, purposes and understandings of what the initiative is intended to achieve must be made explicit at the beginning, since "the tensions between the goals of an exogenous ICT intervention and differing ambitions of the host community may lead to difficulties in sustaining engagement" (ibid., p. 23). In the final chapter of the thesis, some implications of these issues are explored further.

CONCLUSION

A number of challenges to sustainable community internet implementation have been highlighted in this research. While these challenges could be attributable to specific local conditions that will not apply in other settings, the findings are sufficiently strong in their own right for confidence in a number of conclusions to complete this chapter, followed by recommendations in the final chapter.

To what extent can a community internet scheme generate positive social outcomes, without community ownership? The answer appears to be clear, on the basis of worldwide research, including the present study with the different outcomes in two case studies. Agreement has been reached among scholars and practitioners in the field of community internet that “the social sustainability of any community technology activity is dependent on whether or not it forms an integral part of, and contributes to, the shared experiences that constitute community life” (Telenor et al. 2005). In a similar vein, in New Zealand Ashton and Thorns (2004) argue that although “ICT tools can reconnect people ... for this to work well, this potential needs to be understood, and strategies developed that are clearly grounded in the needs and aspirations of specific communities” (ibid., p. 2). In this context of shared experiences and integration of agendas, community participation is critical.

Effective use of ICT has been defined similarly as “the capacity and opportunity to successfully integrate ICT into the accomplishment of self or collaboratively identified goals” (Gurstein, 2003). Gurstein’s definition is important for the use of the words *self* and *collaboratively*, as well as *integrate*, and underscores the outcomes of Computers in Homes at Case A in this study, the research site that had the most reasons to face difficulties in successfully bedding in the Computers in Homes scheme. I saw that the parents who had participated in this research stepped forward of their own volition to pull the scheme back on track. Some combination of interpersonal connection, encouragement from school and Computers in Homes staff, and an altruistic desire to see things improve for the school community in future led this group to take charge of Computers in Homes for themselves.

The New Zealand approach to closing the digital divide in its Digital Strategy, expressed through the funding of a variety of community based initiatives, is nevertheless perceived by researchers in the field as exogenous and “arguably top down, where bottom up, and partnerships, are best” (Field notes, 21 June 2005). It seems that bottom-up, multi-stakeholder partnership approaches to ICT are becoming more numerous. However there are tensions inherent in a multi-stakeholder approach to community internet: for example, who defines the agenda? The norm of Computers in Homes practice is for schools to own the scheme and make use of it to serve their own goals. The type of ownership exerted in community ICT can have effects on the outcomes, such as relatively more or less interest in and commitment to research.

Graham has critiqued New Zealand’s Digital Strategy, querying whether there is sufficient contribution to and ownership of it by the community:

...It seems to me that the success of the NZDS will depend on the degree to which policies largely internal to government reflect a consensus that has been reached, or may be reached, in the public sphere. My question then becomes – who gets to tell the story of community networking in New Zealand? Maybe the goals of the Strategy grew out of a dialogue with and among communities and the communities agree those are the goals. But this is not evident from the NZDS itself. (2007, p. 1)

In the final chapter, implications of the present study are considered, with recommendations for policy, practice and research.

CHAPTER 6: CONCLUSIONS

A SYNTHESIS

The outcomes of this research on adults' use of free internet service at home have implications for further research and practice. This final chapter will bring together a number of considerations for policy makers and practitioners in low decile community settings aiming to increase levels of engagement with the internet as a means of building stronger community. Researchers interested in understanding the interplay between elements of the social setting, and success and continuity of internet use, will find strong leads in this study for further research.

From the beginning my intention was that the study would tell the story of events and people's responses to them, among groups of people entering into a relationship with the internet at home for the first time. The mixed method, multiple case study research design thus emerged from a view of the world in which individuals' experiences are primary building blocks in constructing trustworthy social research. A social constructivist view also underpins my belief that research in social settings is collaborative insofar as researcher and researched co-create understandings of the issue at hand, on the basis that reality should be understood as relative and subjective, and that the researcher's key role is to piece together multiple viewpoints. Case study research is an ideal means of achieving this, and proved to have great value in this study. I sought over a period of years to see the localised free home internet experience through stakeholders' eyes, to assemble and analyse the body of data derived on this basis, and in this way to evaluate the validity of two propositions about community internet interventions, in a step by step manner. In broad terms therefore the research orientation was qualitative, while within that overarching epistemology a number of methods, including quantitative, was used.

The goal anchoring the research throughout has been to assess how internet access and social cohesion are related in a free home internet scheme. The research design directed a number of methods towards collecting evidence in each case study setting concerning the use made by individuals of the free internet access provided, and on both existing and enduring social cohesion. Importantly, first of all, an overall decline in internet use among the study sample as a group suggests that Proposition 1 (free home internet access leads to ongoing

internet use) is not supported by the results in this study. In itself, this finding is important because it undercuts the assumption that providing internet access to a community equates to a community now being online in any significant sense, and represents a weak outcome if numbers of people online is the single criterion of success for providers.

Yet a second important finding is observable in an aggregation of the results set out in chapter 4. In Case A, not only was there stronger evidence of social cohesion at Time 1 than at Case B, but the uptake and retention of internet use was more successful here despite implementation issues concerning accountability and responsibility for Computers in Homes in that setting. Additionally, signs of a collective effort among the Case A parents to sustain the scheme for the future suggest that social cohesion within that group had been built appreciably on the basis of the Computers in Homes initiative, and that the cohesion in turn may have been related to its ongoing momentum. How may we account for this?

The results at Case A are consistent with the view that “not all deprived communities are the same... in some very deprived communities - often ethnically diverse, mobile, urban neighbourhoods - people tend to have high aspirations for the future” (UK Cabinet Office, 2008), a point also made to me by the Computers in Homes national coordinator, who remarked that through the scheme, some parents do “become aspirational...they see new options such as distance learning” (D. Das, personal communication, 23 November 2008). Of most significance may be the fact that social cohesion was more markedly apparent at Case A at Time 1, characterised especially by the ‘neighbouring’ element, volunteering, and household permanency. Results at Time 2 suggest social cohesion was strengthened at Case A after the free home internet had been in place for over a year, so that Proposition 2 (internet access is positively related to evidence of social cohesion) appears to be supported in relation to specific conditions in this case. Thus, thirdly, it may be inferred that a cohesive community setting is likely to favour the establishment of ongoing internet use in the home. The Computers in Homes scheme has a number of socially supportive elements in its philosophy and practice, and is therefore well positioned to harness existing social cohesion to support its community internet initiatives.

It may be speculative to conclude that these results are proof of a positive relationship between social cohesion and internet access based on a stronger relationship between these factors in one case out of two in the research (however I do argue in section 6.2.1, below, there are a number of reasons to regard this conclusion as credible). On a practical level that clearly relates to the results in this research I suggest that this relationship may exist under

certain conditions, which include the presence of supportive networks and relationships in the target community, and leader figures who exert influence through communicative confidence and who show willingness to mobilise to solve collective problems. Additionally, the culture of Computers in Homes, which provides a structure of learning within social contexts, at its best places new internet users in a setting in which they can construct a meaningful internet experience with the guidance of others. Results showed that this occurred more effectively at Case A. In this sense, social constructivism not only gave form to the research design in this study, but was also a feature of its results. Furthermore, as discussed in the introduction to chapter 5, the evidence of the study indicates there may be a recursive element to the relationship stated in the research goal: existing social cohesion facilitates internet use; in turn, internet use in a cohesive group setting helps further strengthen social ties. Thus the outcome of increased social cohesion in Case A may have sprung more from the fact that Computers in Homes practice fosters social networks by bringing local families together, than from use of the internet technology itself.

Thus a fourth lesson from the study is that the simplistic technological determinism, or “valorizing ...[of] ICTs” (Ganesh & Barber, 2009, p. 852) in which internet access is believed to have a direct bearing on the social wellbeing of a community risks a misreading of how social cohesion can realistically be facilitated. Rather than the technology itself being the key to improving social outcomes, it appears that existing cohesion and group dynamics such as the presence of opinion leaders are more significant factors, and thus the effective integration of the internet in everyday life is a process that is socially constructed. Given this finding and the overall sense that social support was critical to the relative success of Computers in Homes at Case A, Computers in Homes should consider all facets of its philosophy, operations, and plans for future developments that highlight socialisation (networking, events, celebrations, one-to-one mentoring, and so on) to be the jewels in its crown. All opportunities to enhance these social support elements of Computers in Homes should be pursued since they are related to greater success in embedding ongoing internet use in a community group. More detailed recommendations on this point are provided in section 6.1 to follow.

Although in the most general sense, Computers in Homes could be viewed as implicitly an ‘access’ model in that its initial focus is on sourcing recycled computers and overseeing individual school or community projects that ensure they are used by the most needy for internet access, the scheme places a strong emphasis on the social and cultural context in which Computers in Homes families live. In this way the Computers in Homes model has at least the potential to transcend the limitations of an “ensure access and use will follow”

(Novak & Hoffman, 1998, p. 10) approach, explored in the literature review. The present research which took place within low decile urban Computers in Homes settings suggests that the relationship between internet access and social cohesion is potentially significant, given the right conditions, including social support and volunteerism that assist the more anxious or unmotivated users to make sense of an equivocal technological form and give some assurance that more of them will be encouraged to stay on board. However it was also apparent that new users may move out of the digital divide only in passing, so that acquiring “the necessary literacy skills to maximise their opportunities using digital means” (Ministry of Economic Development, et al., 2004, p. 3) may be a problematic objective for government agencies or other providers unless understanding of the social construction of knowledge and adequate funding to support it is in place. In the Computers in Homes study, it became apparent that families often lacked fundamental technical support, lacked the motivation to seek help or to make use of what training was available, and somehow slipped through the net of local social support mechanisms.

Finally, in a scheme such as Computers in Homes which relies on a partnership between public, private and community interests, ‘ownership’ or accountability issues are potentially a hindrance to free internet access achieving real traction where improving social cohesion is the goal. As discussed in chapter 5 (section 5.2, pages 232 - 233), while the school principals at Case A and Case B in the present research were deeply committed to leading change in their communities (refer also to chapter 4, section 4.2.2), it was also apparent that parents themselves did not necessarily share the view that they needed to become more aspirational: contentment and life satisfaction were relatively high. Participants’ strong feelings of attachment to and pride in their neighbourhoods were contradicted by the principals’ “mission to lift community aspirations of communities said to be ‘on the wrong side of the railway tracks’” (J. Williams, et al., 2005, p. 58). This result is significant given more recent assertions that

The objectives of ICT initiatives must be aligned with the goals of the host community: if they are not seen as relevant they will wither away regardless of assets. The tensions between the goals of an exogenous ICT intervention and differing ambitions of the host community may lead to difficulties in sustaining engagement. (Gaved & Anderson, 2006, p. 23)

Given the subsequent decline in internet use between Time 1 and Time 2 of the research, this observation is a useful pointer about community internet schemes. Careful alignment in goals and purposes is important, so that school management and Boards of Trustees’ goals are

congruent with the priorities of the community. Where they are not, work may be required to achieve a shared vision before project implementation, such as planning and information meetings involving key stakeholders.

Relatedly, 'official' bodies such as Computers in Homes staff, and researchers, need to consider a tactical exit from the partnership, having judged that the community has access to sufficient community and funding capital to sustain the scheme. Exogenous and endogenous agents can have varying understandings about what will happen once funding comes to an end. To what extent will the community itself be expected to pick up the impetus of community ICT? An externally funded initiative may also have a strictly limited funding time frame in mind, and a requirement that research will justify through its findings that the investment has been worth it. A grassroots initiative may have a more informal approach and a willingness to accept anecdotal evidence of achievements rather than published research.

Some recognition of the importance of stakeholder alignment is evident in New Zealand's updated Digital Strategy 2.0 (New Zealand Government - Ministry of Communications and Information Technology, 2007) with a focus on collaboration that was less apparent in previous versions (Ministry of Economic Development, et al., 2004; New Zealand Government - Ministry of Communications and Information Technology, 2007). Policy makers will welcome findings of the present study showing the necessity to integrate stakeholder agendas, as was seen in Case A where Housing New Zealand, two schools and Computers in Homes all had a hand in trying to steer the scheme - as confirmation that the new Digital Strategy 2.0 is on the right track. However policy and practice also needs to embrace the finding that a socially supportive setting must be prioritised. Consideration of this point is now developed.

6.1 SOCIALLY SUPPORTED INTERNET CONNECTEDNESS

While the present research was not designed to evaluate Computers in Homes as such, but rather to assess a broader issue of the relationship between internet access and social cohesion, the study does highlight advantageous features of the Computers in Homes scheme that may be considered by other providers. A need for careful attention to the unique characteristics of each targeted community in a free home internet scheme is implied by the present research, and in particular some form of assessment of the social cohesion that

already exists there, as well as the place of individual families within local support networks. A key advantage of Computers in Homes in this respect is that its formal and informal social structures provide social connections, which in turn help to develop motivation, engagement, belonging, and commitment to something bigger than an individual's own use of the internet. This may be the real 'answer' provided by the results of the present study to the question of how internet access and social cohesion may be related in a free home internet scheme. Internet access, through the channel of Computers in Homes or a similar scheme, can facilitate social cohesion where appropriate structures and practices exist to foster a socially supportive learning environment, where obstacles such as confused accountability are recognised and addressed, and where a system of quickly identifying and responding to barriers experienced by internet users is prioritised.

The contribution of Computers in Homes to addressing the digital divide in New Zealand, and in the cases researched for this study partly meeting the expectation of government funders that a variety of social benefits will accrue, is to make these conditions possible. Computers in Homes can offer the necessary operational structure, the highly social culture, an environment of practice in which typical obstacles and barriers are more readily anticipated, recognised and addressed, and in which user types are understood at least on an informal level. This research during late 2003 to mid 2005 highlighted the need for clear accountabilities; it identified barriers to internet uptake and trends in use; and refined awareness of group cohesion processes related to high-connector individuals who may serve as opinion leaders, mentors and champions. All of these findings point towards the potential for enhanced sustainability of internet use in communities needing a deeper understanding of how to reap the benefits inherent in a free internet scheme. Practitioners in the field should find useful ways to enhance success and longevity of community internet schemes in the outcomes of this study. Project implementers should consider potential complexities from the point at which families are selected, throughout their involvement in the scheme, and take account of these. The recommendations that follow offer some ways in which this may be achieved.

Those responsible for establishing Computers in Homes at each new site could facilitate project continuity by focusing on the resources of 'place' (the neighbourhood itself, the networks that exist there, the presence of leaders and volunteers), offering tactics for building on the available social and cultural capital, and working to ensure that the Computers in Homes community itself becomes self-determining. The Computers in Homes scheme already has the structures in place to carefully effect such a shift in ownership, with its emphasis on social networks (a peer mentoring scheme) and socialisation (family meetings and training

sessions). Specific actions recommended include the following tactics which may be viewed as complementary rather than offered in any priority order.

6.1.1 SOCIAL SUPPORT

Capitalising on social networks and developing peer mentoring are valuable tactics in managing ambivalence about technology among those who are internet novices and who may self-exclude, possibly lacking confidence or an awareness of what the internet makes possible. This can only be addressed by first identifying individuals in this category.

- SIMPLIFIED USER SURVEY

The current research used a questionnaire to explore how people were using the internet as well as what they felt about the experience. A much simplified version of the survey questions relating to internet use could be used to identify low-connectors, those having difficulty in any way and especially those who might be 'internet transients'. A straightforward and short survey form could be completed at intervals, starting at the first parents' meeting. Individualised solutions to a variety of barriers could then be devised, potentially improving people's experiences and increasing retention overall.

- HOME VISITS AND TECHNICAL SUPPORT

The literature shows that "a sustainable ICT initiative requires resources dedicated to providing ongoing support" (Gaved & Anderson, 2006, p. 17); results of this study show this to be fair comment. In theory each Computers in Homes school provides a technician who is available to parents for technical queries, problems and elementary training. In practice such staff are extremely busy, and I observed many parents found it difficult to approach the school. Arguably there is a need for home visits: if resources could be found to fund such support, more participants would stay online.

- ENHANCED MENTORING

Active fostering of mentoring relationships by adopting the simple user survey (see above) is desirable. Parents' continued involvement with a mentoring relationship could become one of the 'rules' of signing up for Computers in Homes. Mentoring could occur at structured meetings and workshops, or in a one-on-one buddy system in which a motivated high connector would work with one or two low connectors. A systematic mentoring scheme would

give parents direct access to active help from peers who may not be perceived as threatening in the same way as official people.

- TALKS / PRESENTATIONS

A given group of new users such as those involved in the case studies in this research is likely to include a few 'stars' (high-connectors) and many low-connectors. High-connector families could be asked to talk about their internet use and give presentations as a routine part every Computers in Homes parents' meeting. Such an investment in showing parents viewed as potential targets of Computers in Homes, in a compelling manner, what the internet can help them do and achieve, would arguably begin to foster the necessary social support.

All of the above recommendations assume a largely exogenous approach which constructs the community as being in need of the internet as an "uncomplicatedly good thing" (Ganesh & Barber, 2009, p. 856). The present study has demonstrated that to an extent a risk exists that community internet 'solutions' miss the mark in some communities (such as Case B) resulting in "zones of silence" (ibid., p. 859) where some voices are simply not heard. In this sense "participatory communication [is] a key value" (ibid.) and providers bringing interventions such as Computer sin Homes should seek to be "inclusive of diverse voices" (ibid.) by all possible means.

6.1.2 COMMUNITY ACCESS POINTS

In view of the importance of social support, discussion and role modelling, as well as extended family networks that are culturally important to the communities targeted by Computers in Homes, the diversification of government-funded free internet to include more public access points where people can be social while using the internet appear desirable. Policies deriving from the Digital Strategy 2.0 are evidently moving ahead on this through the Community Partnership Fund aimed at helping to set up community access points such as at libraries where people can be among others.

6.2 FINAL REMARKS

With this study I set out to investigate community internet in practice, aiming to assess the relationship free home internet access would have with social cohesion, in settings where

providers had implemented it for weakly defined community building purposes. An implicit message is that these 'community building purposes' need to be carefully problematised by free internet providers, along the lines of the social cohesion construct used in this study, before internet interventions are considered and implemented. Much of the literature available around 2000 gave a sense that the digital divide was an unproblematic matter of providing more internet access, during a period when new media technologies appeared to be rapidly changing the way we interact and participate in social processes. In the public domain and in governmental discourse, assumptions about the social benefits brought about by internet access were explicit and, even now, seem to endure. Chapter 2 showed that deterministic assumptions about the effects of technology in society are simplistic, diverting attention to polarised debates about the role of the internet in society. Academic commentary has moved away from 'either-or' debates. Yet it may be that institutional assumptions based on 'ticking the boxes' of internet access and infrastructure with a view to improving society are not necessarily wrong, but rather they must be tempered with realism and a fine-grained understanding of the social construction of technology. The present study provides a reality check, and a number of important considerations for policy and practice – some of which have already been applied by Computers in Homes as it evolves.

6.2.1 STRENGTHS AND LIMITATIONS

Methodological limitations first addressed in chapter 3 (section 3.9, page 129 - 132) are briefly revisited here in the context of strengths of the study that have counterbalanced them, summarised in the section that follows. First, the case study design proved invaluable for the fact that it provided a sufficient basis for comparison that offered markedly contrasting findings by case in relation to the research goal. While it is important not to overstate the significance of the results at Case A in terms of relative success in internet uptake, continuity of the free home internet scheme with the direct involvement of the parent community, and indications of recursive social cohesion processes in contrast to Case B, the weight of evidence based on a longitudinal mixed methods design gives confidence that a relationship between internet access and social cohesion in certain conditions does exist. Despite the aspects listed below that have the potential to undercut dependability, the authenticity afforded by meticulous, copious detail amassed through research conducted with attention to design rigour and integrity in the process prevails over other aspects of method that, in hindsight, could have been improved upon. On balance, trustworthiness is strongly present in the outcomes of this study.

Aspects that could have been handled differently but that may not have discernibly altered the credibility of the research outcomes include the sample size. The number of parents involved in the two rounds of interviews across the two case studies was small, with an initial group of 26 adult participants at Time 1 reduced to 23 for the purposes of analysis, and at Time 2 nine participants remained. A related issue was the nature of being caught up in the research setting of Computers in Homes and its structure of project launch and re-launch events, its existing relationships and schedule of dates, and the schools' determination of which families would be receiving the free internet at home. This was a complex sampling dynamic to work with that had some effect on numbers of people available, and who was available, to join with me in examining the free home internet experience in a community setting. Yet the depth of interactions, the openness of exchanges and the effectiveness of the research relationships established, and the richness afforded by observation and involvement over a long period achieved authenticity in the study with a relatively small number of participants. The research is credible in its social and historical context, trustworthy in its results, potentially transferable within similar practitioner settings, and dependable in giving direction for further research. Moreover, because the unit of analysis in this research is the group of families involved in Computers in Homes at each case study site (see section 3.2, page 95), then the 'package' of data assembled in each case is at the least sufficient, and even convincing, in light of the goal of the study.

In chapter 3, the ideal of research objectivity was examined, and within a constructivist research paradigm, the goal of the case study researcher is to develop an authentic view that is balanced and inclusive. All stakeholder views, perspectives and concerns should be given space, so that the research is not biased; if any voices are omitted, then bias is created and authenticity undercut. While it could be argued that those participants who 'self-excluded' by dropping out could have been pursued in order to include their voices if the resources had been available to do so, in the current study, I believe it fair to claim that inclusivity was achieved as far as it was possible to do. Constraints also existed in terms of the time available to a sole researcher to maintain contact with as many families and other key informants as possible, and to complete – for example – a set of interviews within a reasonable span of time.

Social desirability bias is a potential limitation. Research participants may have felt some compulsion to agree to be involved, because one of the conditions of becoming a Computers in Homes family is that they will agree to be involved in research. However in my view a number of checks and balances existed to ensure that people did not feel compelled to

participate, including the time invested in explaining to parents' meetings what the research was about, talking to people informally afterwards, providing written information, explaining again on the telephone when I called to follow up, meeting them in person at home and explaining once again that this was voluntary, not compulsory; explaining their various rights including the right to decline to participate (refer to 'Participants' Rights', page 264).

Relatedly, the possibility exists that research participants felt there could be 'right' answers, and responded accordingly. For example, when asked whether or not they were proud to say they lived in their neighbourhood, they might have stated 'strongly agree' thinking that this was expected. In my view, the questions were posed in such a way that they were in no way leading, and the responses would have been genuine.

6.2.2 FURTHER RESEARCH

Kraut and Kiesler (2003, in Gaved and Anderson, 2006) comment that "a major reason for some changes in our findings over time is that the internet, the purposes for which it is used, and norms surrounding use are co-evolving" (ibid., p. 27), a point that becomes even more important in a field of practice, policy and research in which all sectors should be informed by one another and should not operate in isolation. Clearly there is a need for research to be engaged with practice, and for policy to be informed by practice and research in order for all to keep up with the issues and develop workable responses. This study is an example of one way in which this type of collaboration could work, because the Computers in Homes national coordinator was aware of this study as it unfolded and adjusted evolving practice as a result, as discussed in chapter 5 (section 5.3.2, pages 245 – 246). Confused accountabilities at Case A led her to recommend improvements to implementation at a new Computers in Home site in Northland

Gaved and Anderson (2006) make the point that "rapid technological improvements and the changing levels of penetration of ICTs into society make comparisons difficult" (2006, p. 26). They go on to cite Haythornthwaite who has described the internet as "an emerging phenomenon, not a mature one" (in Gaved & Anderson, p. 26). Even the large studies cannot yet be described as long term, and internet effects continue to change over time:

The scarcity of data available examining specific communities over long periods of time is compounded by the rapidly changing internet and wider social environment which makes it difficult to make many meaningful longer term comparisons; however we expect in the future that the rate of

internet development will slow. In the meantime we can make some initial observations. (Gaved & Anderson, 2006, p. 14)

What can be done, however, is to develop recommendations such as those offered in this chapter (section 6.1) that are supported by the evidence as well as the literature, and to conclude that there is a clear need for programmes of research that will be ongoing over a number of years, with particular foci based on the areas of contention or areas where little or no data currently exist. The present study has made a contribution to the field in that it has identified dynamics and practices characteristic of low decile New Zealand communities where top-down intervention programmes are likely to be focusing their activities. In this way, because such exogenous initiatives tend to assume that internet access will build stronger communities, barriers to social cohesion goals can be identified and mitigated.

A good deal of evidence was assembled in this study that offers fertile ground for further research, and better informed policy and practice. Further research on internet access and social cohesion should be established in similar settings to the Computers in Homes case studies in this thesis, to run over a number of years as recommended by Gaved and Anderson (2006), so that full assessments of optimal conditions for successful, continuous community internet can be achieved. Ultimately the results of the study suggest that assumptions about the relative permanency of people's internet use, once they have established access at home, should be made with considerable care for the relationship between internet use and social outcomes is complex.

Researchers interested in studying internet use in a community setting will find the design of the present study useful for the layered richness and subtlety of analysis it afforded. Another mixed methods study from New Zealand on influence in focus group settings showed

the value of using both qualitative and quantitative methods in research, not for the purpose of using one to confirm the other, nor necessarily using one in preparation for the other, but as empirical partners, offering different perspectives on the same phenomenon. Although there was some convergence of findings from these methods, each set of findings also raised questions about the other. (Zorn, et al., 2006, p. 135)

In the present study, the quantitative findings show uptake of continuous internet use overall was weak, and internet use across the sample declined over time, while they also identify different types of user including high- and low-connectors, with contrasting internet outcomes at each of the two case studies that appear likely to be connected to social cohesion dynamics. Qualitative analysis revealed much about individuals' attitudes and behaviours that

contextualised the high and low internet use, in particular about the motivations of high-connectors that related also to their roles as leaders in the group setting, and also about barriers to internet use. Further research is now needed, on the basis of what was found in the present study about high-and low-connectors, to assess the apparent relationship between sociability and greater internet use, versus insularity and lesser internet use. In the case of the latter group, social support and proximity to mentor/leader figures may be critical if the objectives are getting more people online as well as creating more social connectedness in the community setting.

Furthermore, qualitative and quantitative findings relating to social cohesion were similarly complementary, together offering far more than they could have done alone. Data on people's intentions to stay in the area, whether they rented or owned their homes, or how many neighbours they know by name, for example, provided an initial platform of information about social cohesion in each case study group, against which the stories and anecdotes of social support networks, the observations and broader discussions could be set. Simplistic interpretations and conclusions were avoided: for example, the confused accountabilities and school restructure at Case A could have led to a superficial reading of the events there and perhaps an expectation that internet uptake and social cohesion outcomes would be minimal. The opposite was the case, and the careful interplay between methods and data made it possible for this researcher, in addressing a rich mass of material, to mine for nuggets of value for further research and improved practice. "Putting quantitative and qualitative data into empirical conversation with each other in this manner provided a richer understanding..." (Zorn, et al., 2006, p. 135) of the types of outcomes that may be expected from bringing free home internet access to a particular type of community setting. This richness calls to mind Yin's reference to the helpfulness of diversity in methodology and the "crosswalk between the questions of interest and the likely sources of evidence" (Yin, 2003, p. 74).

In the literature review in chapter 2, a study of low income women internet users in a YWCA community resource centre was referred to (Eubanks, 2007), for the participants expressed a dislike for the idea of building a bridge over the digital divide, which is a commodity approach, and the researcher in that study was interested in exploring their understanding of it. Writing of one of her research participants, Eubanks reported

People on *both* sides of the putative "divide" have skills, strengths, and resources to share with each other. Technology, in the best-case scenario, should connect people - strengthened by their diverse experiences, across levels of social stratification - in systems of equal barter and exchange. After she finished drawing, she said to me, "If you take one message from our conversation to policymakers, it's

this. **We don't need to look at the hole. We need to look at the net.**" (Eubanks, 2007, 'Alternative articulations' section)

The present study of internet access in low income school communities in New Zealand comes to similar conclusions. The resources of the community itself are highlighted as having considerable latent power. Rather than falling into the trap of "deficit theory syndrome" it is very apparent on the basis of this study that stakeholders should recognise the community's existing capacity. The "net" – the networks, the relational practices existing in social capital and the dynamics of social cohesion – is the true resource of high valence in the digital divide context that must be recognised, not the technological hardware or even the infrastructure. The hole, the gap, the divide, ceases to be evident when the web of social networks is sufficiently dense and resilient. What was found among participants at Case A was that those resources exist even in unexpected places, in a way that resonates with Eubanks (2007) who cites one of her participants saying "'have-nots' possess many different kinds of local knowledge: community knowledge, knowledge of 'the system,' ... more finely attuned social Geiger counters, as well as social networks, navigation skills, and an ethic of sharing" (Eubanks, 2007, Alternative articulations' section).

These are the relational resources existing in cohesive groups such that "technology ... can mediate across social structure by creating a network of equal exchange" (Eubanks, 2007, 'Alternative articulations' section). This study has highlighted both the risks and potentials that inhere in community internet interventions: on the one hand, outside-in solutions may override the needs of those who remain silent and unrepresented, while offering the very social structures that help harness dynamics of cohesion, frame locally-defined solutions and encourage the community voice to be heard.



APPENDIX 1: INFORMATION SHEET



COLLEGE OF BUSINESS

Department of Communication and Journalism

Private Bag 11 222,
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New Zealand

Telephone: 64 6 350 5799 extn 2369



Research on Internet use: how it affects a community

Tena koutou

Kia Orana

Talofa

Fakaalofa lahi atu

Malo e lelei

Taloha ni

Ni sa bula vinaka

Talofa lava...

Hello! I am a student from Massey University, and I also work as a Communication lecturer at Unitec Institute of Technology in Mount Albert, Auckland. My research on Computers in Homes in Clendon will mainly involve interviews in people's homes, and I aim to learn more about how using the internet affects people's involvement in their communities. This research is completely independent of Computers in Homes – it is being carried out by me as a postgraduate student of Massey University for a PhD thesis.

Who participates?

Your school gave me permission to approach parents on the Computers in Homes list to ask for volunteers. I am asking your permission to come to your home to interview you about Computers in Homes. I plan to ask the adults (those over 16 years old) some questions about how the computer has affected family life, and the children some simple questions about how they are using the internet. I would like to interview as many Computers in Homes families as possible. This is because I want to be sure I have heard ideas and opinions from the widest possible range of people who have joined the project. There are no risks or discomforts associated with this research: if you do not wish to answer questions, you do not have to; and I will try to meet with you at a time that is most convenient to you so that your normal family life is not interrupted. If necessary, a translator may come with me.

What's involved?

The information I get from the interviews will be recorded on tape and then written down for me to look at later. The tapes and transcripts will be locked away so that only I will have access to them, and they will be destroyed in five years. When I have obtained sufficient information I will analyse it so that I can write reports and articles about the Computers in Homes project and how it has affected this community. If you wish to have a copy of reports I write for the school later on, you just need to contact me (see below) and you are welcome to read the findings. No names will be used in any of this writing.

What will you be asked to do?

I will be concentrating mainly on interviews with you in your home. I will need to do this around the time that you receive your computer, and then again in several months and again in another year. Therefore I will visit you three times for interviews of about 45 minutes, and I may see you informally at other Computers in Homes events. This is so that I can track progress, changes or trends over time. The questions I will ask will be, for example, how important the computer is in your daily life, how often you use the internet, what your goals are in using the computer, and so on. At family meetings at the school, I will occasionally ask for volunteers to join a “focus group” where I will lead a group discussion of Computers in Homes. I plan to conduct this research over a two-year period (2003 – 2004), although it is possible that it will continue into 2005.

Participant's Rights

You have the right to:

- decline to participate;
- decline to answer any particular question;
- withdraw from the study at any time;
- ask any questions about the study at any time during participation;
- check the transcripts (written version of the interview) to ensure you are happy with what is recorded in written form;
- provide information on the understanding that your name will not be used unless you give permission to the researcher;
- be given access to a summary of the project findings when it is concluded.;
- ask for the audiotape to be turned off at any time during the interviews.

If you have any questions at all, please contact me, or my supervisors:

ME:	1ST SUPERVISOR:	2ND SUPERVISOR:
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Thanks!

Jocelyn Williams

This project has been reviewed and approved by the Massey University Human Ethics Committee, PN Protocol 03/114. If you have any concerns about the conduct of this research, please contact Professor Sylvia V Rumball, Chair, Massey University Campus Human Ethics Committee: Palmerston North, telephone 06 350 5249, email humanethicspn@massey.ac.nz.

APPENDIX 2: CONSENT FORM



COLLEGE OF BUSINESS

Department of Communication and Journalism

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Research on Internet use: how it affects a community

CONSENT FORM

THIS CONSENT FORM WILL BE HELD FOR A PERIOD OF FIVE (5) YEARS

I have read the Information Sheet and have had the details of the study explained to me. My questions have been answered to my satisfaction, and I understand that I may ask further questions at any time.

- I agree/do not agree to the interview being audio taped.
- I agree to participate in this study under the conditions set out in the Information Sheet.
- I agree that my child/children may participate in this study under the conditions set out in the Information Sheet.

Signature:

Date:

.....

Full Name – printed

.....

This project has been reviewed and approved by the Massey University Human Ethics Committee, PN Protocol 03/114. If you have any concerns about the conduct of this research, please contact Professor Sylvia V Rumball, Chair, Massey University Campus Human Ethics Committee: Palmerston North, telephone 06 350 5249, email humanethicspn@massey.ac.nz.



Massey University

8 December 2004

Ms Jocelyn Williams
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Dear Jocelyn

Re: HEC: PN Application – 03/114
Connecting and disconnecting: A study of the community consequences of information and communication technology (ICT) access for new user households in three suburbs of Auckland, New Zealand

Thank you for your letter dated 20 October 2004 and the amended application.

The amendments you have made now meet the requirements of the Massey University Human Ethics Committee: Palmerston North and the ethics of your application are approved. Approval is for three years. If this project has not been completed within three years from the date of this letter, reapproval must be requested.

If the nature, content, location, procedures or personnel of your approved application change, please advise the Secretary of the Committee.

A reminder to include the following statement on all public documents "This project has been reviewed and approved by the Massey University Human Ethics Committee, Palmerston North Application 03/114. If you have any concerns about the ethics of this research, please contact Professor Sylvia Rumball, Chair, Massey University Campus Human Ethics Committee: PN, telephone 06 350 5249, email humanethicspn@massey.ac.nz"

Yours sincerely

Dr John G O'Neill, Chair
Massey University Campus Human Ethics Committee: Palmerston North

cc Associate Professor Frank Sligo	Dr Catherine Wallace
Dept of Communication & Journalism	Dept of Communication & Journalism
PN254	PN254

Massey University Human Ethics Committee
Accredited by the Health Research Council

APPENDIX 3:INTERVIEW SCHEDULE

The interview schedule consists of three sections. Questions within each section are presented here without the formatting shown in the forms used in the actual interviews. The format of the original schedule used tick boxes, and linear scales marked 1 – 5, for responses on a Likert scale.

SECTION A: COMMUNITY BELONGING

1. How long have you lived in your neighbourhood? (Scale 1 – 5)
2. Do you own or rent your home? (*Option of two responses*)
3. How proud are you to tell others that you live in your neighbourhood? (Scale 1 – 5)
4. Do you disagree or agree with each of the following statements?
 - I am interested in knowing what my neighbours are like
 - I enjoy meeting and talking with my neighbours
 - It's easy to become friends with my neighbours
5. How many people do you know by name and say hello to in this immediate neighbourhood?
6. How many of your neighbours do you know well enough to ask them to ...
 - Watch over your house if you're away?
 - Ask for a ride?
 - Talk with them about a personal problem?
 - Ask for their assistance in making a repair?
7. How likely is it that you will leave this area in the near future (ie next 1-2 years)?
8. In regard to how much time you spend at home, are you....
 - Working at home
 - In paid employment for 35+ hours per week outside of home
 - In paid employment for <35 hours per week outside of home
 - A caregiver/homemaker
 - Retired
 - Disabled
 - Other – please specify.
9. About what distance do you need to travel to go to work? (...or, if not working, to conduct the business of your daily life eg go shopping, to schools).
10. What is your primary mode of transport?
11. What are the two most important ways that you ...
 - Stay on top of what is happening in your community?
 - Get information to make decisions about products you buy?
12. How often do you have discussions with other people about things happening in your neighbourhood? Describe to me what you think of as your family.
13. Do you feel you have many people to turn to when you really need help? (eg if you needed transport urgently, or had to arrange childcare/babysitters...)?
14. Did you visit someone yesterday or today (not to do with work)?
15. Did you phone someone just to talk yesterday or today (not to do with work)?
16. Contact with family members: How often do you get together? How often do you speak on the phone? How often do you exchange e-mail?
17. About how many hours per day do you spend on each of the types of media listed:
 - English-language TV (not "pay TV")
 - Radio
 - Newspapers
 - Magazines
 - Books
 - Community media targeted to your ethnic group
 - E-mail and internet
 - Pay TV

SECTION B: "INTERNET CONNECTEDNESS"

1. In regard to the internet, would you describe yourself as a...non-user, new user, experienced user?

2. Thinking about all the “pros and cons” of using the internet, would you say it has an overall positive or negative effect on your life?
3. Imagine that you wake up tomorrow and find that the internet (or computer) has vanished. How much would you miss being able to use your computer for email and internet?
4. What are your goals in using the internet? (a range is listed for rating).
5. I'm interested in what activities you mostly use the internet for (a range is listed for rating).
6. How often do you use these places to access the internet? Home, work, school, community centre, public library, internet café, friend's house.
7. Do you go online... (categories of hours for rating).
8. Now think about using the internet for e-mail. On average, how many hours a week do you use the internet for e-mail?
On a “typical” day, how many e-mails would you send?
Do you look forward to reading your e-mail messages? Tell me about this.
9. When you use email, who is it mainly for contact with? Friends, family, people related to work.
10. Do you have friends who you only communicate with by email or text messaging, and have never met?
11. Do you have an e-mail group list for family or friends?
12. Have you started e-mailing a family member with whom you did not keep up very much before (before you had email)?

SECTION C: SOCIAL CAPITAL

1. Has using the internet changed the amount of time you spend...
Working at the office, Working at home, Shopping in stores, Commuting in traffic, Reading newspapers (hard copy), Watching television, Spending time with your family, Spending time with your friends, Attending events/activities.
2. Has using the internet changed the amount of time you spend talking to friends and family on the telephone?
3. Has using the internet changed the amount of time you spend visiting friends and family?
4. Has using the internet changed your feeling of connectedness with friends and family?
5. Do you or anyone in your household belong to any clubs or organisations eg related to cultural groups, school, hobbies, sports, politics, religion, or your neighbourhood?
6. Listed below are three “community” activities that you may or may not have been involved in, in the past year. Please show *roughly* how often you have done this in the past year: Did volunteer work eg charity collection, hospital visiting; Worked on a community project; Went to a club meeting.
7. Listed below are a number of statements about interests and opinions. Please show whether you personally agree or disagree with the statement:
 - Most people are honest
 - I am very satisfied with the way things are going in my life these days
 - I wish I could leave my present life and do something entirely different
 - If I had my life to live over, I would definitely do things differently
 - Sometimes I feel that I don't have enough control the direction my life is taking.

APPENDIX 4: “OPINION LEADERS” – INTERVIEW TRANSCRIPTS

Participant A3 (and husband A27), Time 2, 13-9-04

Interviewer - So D-----, with your use of the computer did you get started at the end of last year or were you a bit later

A27 – yes, practically as soon as it arrived in the house I wanted to play

Interviewer - And you actually got it in about...

A3 – the last week of October..or the second to last week – 20-something-th

Interviewer - Now I know from the first time I met you that there were certain goals and that, that you had in mind that I think have subsequently come into effect but we'll get onto that soon if I could just have from you Sue going back to Q2, if you can remember I asked you 'Thinking about all the pros and cons of the internet...would you say it has an overall +ve or -ve effect?

A3 laughs as if this is a joke

A3 – (sigh) Now that **does** depend (laughs)...Um overall I'd say it was positive, about a 4

Interviewer - And for you D?

A27 – Umm – long pause – probably a 4, yeah

Interviewer - Do you want to elaborate or expand – maybe why it isn't a 5, or...?

A27 - Mm, the possibility for that machine to use up hours out of the week that we didn't have anyway – is very large.

A3 – He's saying 'probability' not 'possibility' *[laughs]*

A27 – Um the diary is already far too full and there simply aren't enough hours in any day um but there are so many things that you tell yourself that you really need to do with the computer, it's so easy to spend too much time

Interviewer - So in a way you're saying it's not really fully very +ve because it's somehow taking away from other things in your life?

A27 – Ummm... *[long pause]* No, I can't really say that it's taking away from other things except maybe sleep at the late end of night, um having one phone line to the house, anything that we do on the internet tends to be late at night when people aren't going to be trying to be phoning ...so it's very easy to suddenly discover it's 1 o'clock or 2 o'clock in the morning ... and that sort of affects the next day's work a bit

Interviewer - And from your point of view (S) it's not a 5 because...

A3 – Similar... reasons and... um it is very tempting, tempting to go and look for something and get side tracked or in my case I get terrified that the little zone alarm is flashing too often and I – I suddenly lose confidence and I've got to come off – can't cope with that going

Interviewer - What's the – what do you mean the zone alarm?

A3 – the zone alarm its

A27 – a firewall indicator – the number of times that somebody's trying to access your computer even though it's a random dial-up thing is really quite – scary

A3 - Scary

A3 – We haven't purchased anything like that we've actually gone through shareware and freeware... um D has been 'digesting' NetGuides *[laughs]* ok? and these programmes and – I come home from night school and there's something different happening to the computer. That's another negative for me, it's not – I walk away, I go away on Wednesdays and I come home and something's changed with the computer – the layout's different, um there's another flash bar – D's been –

A3 – fiddling! *[laughs]*

A27 – Improving

Computer vanished etc Q

A3 – I probably wouldn't miss it – oh, a 2, I'd miss it a little. I quite like being able to e-mail Austria, Australia; I like the idea that it's – I can type a letter and send it, rather than wait a week for it to be received

A27 – I think I would miss it a great deal, um I would miss the potential of it rather than the actual use of it, probably - so yeah I'd have to say 5

Interviewer - Now your goals in using the internet...

(see interview forms)

A27 - Business/work soon to be a 5 if we can get our act together

Educating self would be a 5

(A27 has a number of goals rated 4 and 5)

Activities...

A3 – (re banking) – coming up to... when a huge amount of bills hit me I to need to access the bank's information and then I'll need to – switch it off and come away and think "what are we going to do - shuffle money around?" and then I go back and shuffle money around!

[Much discussion of email habits...]

Interviewer - Who do you mainly send e-mails to, S?

A3 – Um...predominantly friends

Interviewer - Do you look forward to reading your email messages D?

A27 – Yes. I'm hoping to buy things that are difficult to find at – nice prices, for the kids. So there's an expectation there.

Interviewer - Is this stuff you would want to put away for them for birthdays etc?

A27 – Yes. Yes.

A3 - I like looking forward to family news

Interviewer - D the email contact (receiving) – do you receive any from friends?

A27 – Nn-no

Interviewer - Do they come to you both or do they come separately?

A3 – No it comes to us both - comes to the family

A27 – yeah...'inter-family communication' rather than individual

Interviewer - So is there any from friends? Yes - very little?

A27 – little, yep

Interviewer - And family?

A3 – it's about the same at the moment, it's eased off cos life's just a bit too busy

A27 – your overseas family's communicating with you...so no I don't get emails from family

Interviewer - Other – like businesses or making inquiries...? Sounds like that's what you do get, if it's TradeMe or...

A27 – yeah um other businesses notification – notifying me of things that become available

A3 – we're hoping to get a bit more – I've put 2, 'very little' – but because we're actually hoping to get um a lot of 'to-ing and fro-ing' especially accounts being able to send the accounts

Interviewer - I think we will do this last short section because it is about whether – in what way the internet might have affected other things going on in your life, and I think that's possibly –

A27 – Yes

...significant here...

A27 – a lot of business paperwork that used to be written freehand that's now formatted differently and computer generated – more time in the office doing that sort of thing – hopefully it's an exponential thing, the longer we do it the less time it will take to do...

Re newspaper reading: "I don't read newspapers, no. (S – I read – maybe the odd news item, like if we went to the NewsTalkZB site for a particular item, we'll get the news off there)

Interviewer - So you are being really selective about what you will see?

A27 – extremely, extremely...

A3 – I read more news than he does – um, and we went through a term where the school was giving each child a newspaper a day – and that was really good, um-but he didn't like it at all

A27 – I disagree – I don't think it's really good at all, um

A3 – cos it took an extra 20 minutes out of my day!

A27 – not only does it take much more time to go through the newspaper, you hand the Herald to an 8 year old kid and every second copy he brings home it's got something pretty horrific in graphic detail on the front page. And I really don't think that kids need to be immersed in that sort of thing. So newspapers and television news and stuff like that, I really don't think it's family-friendly at all. So I don't mind having the information, just not at family time and thrust at the kids.

A3 – But we have a slightly different case, too – Jacob is the youngest in his class, he's actually really behind the rest of the class, so whether the newspaper was going out for year 5s and 6s, which would probably have the ability to assimilate the news better, we can't really say but for our son, we don't let him watch the news, we don't really want him being exposed to what's not nice, other than what we've filtered.

A27 – So the idea of getting this information from the internet in a way that we can filter what's suitable is very attractive.

Interviewer - Watching TV – unchanged?

A27 – I don't know about that! We have a huge backlog of movies – we generally don't watch anything while it screens cos we'd much rather tape it and not have to watch the ads but as a result of that there's a lot of movies that we haven't got around to watching yet and more often I find myself thinking well, I could watch a movie but I'd rather go and look up something that I'm in the middle of researching, um so I think it has affected my television watching. I do watch less television. But curiously the amount of time that has – my weekly television watching has decreased by x amount of hours but I'm not using the same amount of hours to go and use the internet, so I'm watching less television but I'm not using the same time on the internet...but it's the internet that's motivated me to watch television. It's made me lower the priority of television. Which has got to be a good thing.

A3 – Having said that the fact that I'm going to night school for a whole year has meant that you've sort of booked in Wednesdays...

A27 – Oh I look forward to Wednesday when Sue's not home and the kids are in bed and I can just hook up ...

A3 – After 7 o'clock cos I'm at night school and then it's got to be off by 9 o'clock cos I'm driving home...

A27 – and if she's driving on her own and if she has a crash she wants to phone me so I've got to be off the internet between these hours!

Interviewer - ... so that's your dedicated time...

A27 - yep

A3 – and then it's not unheard of that I've gone to bed and gone to sleep, and he'll wake me up at half past twelve, 1 o'clock when he comes back. So, whether the motivation came from the computer being there or me actually having that set time away...because when I'm not away we seem to catch up on a bit of TV

Interviewer - ... sounds like there are a whole lot of factors all working together to create the motivation that's somehow changed quite significantly the way you are managing your life...

Spending time with family – unchanged. Friends – unchanged. Events...

A3 – that's actually increased, for you – because using the internet has meant that you've had access to Ticketek and seen what's coming up in the future

A27 – Yes. But the only things I've attended, I would have attended anyway

Interviewer - talking to friends and family on the phone?

A3 – yes – it has increased the amount of time he talks on the telephone.

Interviewer - why is that?

A27 – yeah, why is that?!

A3 – “oh have you seen x site? And I've been in there...and dah dah dah..” It's given him yet another common denominator for a conversation and – OFF on a tangent! And then he'll realise what he's doing and comes back again

Interviewer - is that your perspective D?

A27 – I suppose that could be valid, yes

Interviewer - Feeling of connectedness?

A27 – since the question is feeling rather than actuality, the answer would have to be yes

A3 – I'd think it's actually unchanged...

Interviewer - So you think you've always been quite connected to people...

A27 – well she lives with a phone grafted to her ear most of the day

Interviewer - Volunteering (6) – S is, from what I've heard and what I've seen, a person who does volunteer to do all sorts of things...-

A3 – yes, ask me where I am tomorrow! - at the school

Interviewer - so most of your volunteering would be associated with the school, would it?

A27 – yes she's got this physical disability that makes her arm jump up in the air when they're looking for a volunteer

Interviewer - How often once or twice a week..?

A3 – yeah at present it is...I would say absolutely, once a week I would do something for either school or kindy, which to me is schooling

Interviewer ...and D----- have you got any of them...

A27 – not at all on any of them

A3 – you see there's something happening at the school at the moment that actually involves the community, that being that we want to re-capitate the school to year 8 – now is that actually school, or is that community?...because I asked, it was my letter that instigated this, up to year 8, because we were originally told the school would go to year 8

Interviewer ...so you're currently...

A3 - ...dealing with that, going through, through the school, the school support, this is now the next step that has to happen – but I feel because it was my letter, I've requested the principal, it was my letter that started this process and I need to be a little bit more hands on. And the same with Computers in Homes – that's not actually a school project that's a community project

Interviewer ... yes it's been different in Clendon because in other areas it seems more closely tied to a particular school but here it was - ...?? with HNZ and... (end of tape – muffled..)

A3 – and that's why F- and I in particular feel up high and dry – and that's why I don't feel that this present intake has quite got enough out of it and if they're talking about a new intake I want to be involved in making it smoother running – and the process and the support behind is there, because our family, I've had a reasonable amount of computer information and I was happy to ask questions, but there are still families out there who don't have internet access, and we've been doing this project for ... (phone rings)

Interviewer ...More to general things... you made the comment that perhaps Computers in Homes has been more powerful for D than for you? Do either of you want to ...

A27 – Well I've always been reluctant to get a computer in the home because I knew that it would take a lot of time away from other things and um from what I've seen most people that get computers saying that it's going to be beneficial for the children's schooling and what have you, the children spend time with games and practically little else. The experience now seems to be that while the kids want to play games, they also want to learn other things as well, and the games playing that they're doing I can already see is hugely beneficial for things like hand-eye coordination, and I was very poor at that when I was a kid so I see that there's good reasons for it. I've always had lousy eyesight and it's been worse over the last ten years or so, and it's very difficult to find any job nowadays that doesn't have some sort of computer involved even if it's basic store work, there's computers and printouts that you're dealing with - so having the ability to drive these machines has got to be better for the children and it's also going to be better for me. So – I'm astounded at how easy it is to learn how to drive these things, and how quickly you can teach yourself a lot.

Interviewer - So have you learned – has Sue been important in this at all of have you both...

A27 – Initially I needed Sue to teach me a few of the basics but it very quickly got to the stage where with hands-on learning I was overtaking what she was going to be able to show me, and if you have an inquiring mind there are all sorts of places you can teach yourself how to do whatever you need to do. Lots of people have suggested to me I should go to the course that's run at the local school or something like that and yet other people who have been to these sorts of courses are telling me that I'm already past that sort of stage and learning online is going to be a faster way of doing things

A3 – certainly we were given a bag full of old NetGuides and D just sat and devoured, and I've had to now add to the budget 'monthly NetGuide'. I don't have the time or the patience to sit there and understand what's happening, and that was one of the reasons in [my] previous work where the programmers always used me to do the corrections ... [irrelevant/garbled bit omitted here]...

I haven't learnt as much as I wanted to in the internet itself – I've certainly used internet banking and I'm quite happy to use internet banking... [more omitted, about porn that 'snuck in there'..?] One downside I've had about the whole system- is our computers do not have a CD drive – every programme you buy now, even the NetGuide, they only come with a CD – our new printer had a CD drive and we can't load that ourselves, but that's...

A27 – so we're already finding that the machine we've got is inadequate for what we wanted to use a computer for, so we're already looking to the next stage, and what we'll be replacing it with.

Interviewer - Support from Computers in Homes?

A3 - the package deal was negotiated with Actrix, there was a debate about this...definitely the first 6 months of internet access was paid for by the Trust and negotiated – depending on who you talked to, at the cheaper rate of \$12.50 for unlimited internet access – and either an additional 6 months, or a year – Actrix says it's a year, 2020 Trust says it's 6 months – I'm going with Actrix at the moment! We certainly have had...if we've had a problem with the computer, The Ark certainly supported us, and it would be through The Ark that we're investigating our new machine – 2 levels greater than what we – the package would be about \$600, which would be better value than some of the others.

Interviewer - Business? All up and running...?

A3 – We're standing on – one and a half legs! And I've got to the stage where I've just created invoices because I'm doing all the bookwork through Excel...

Interviewer - You're an interesting case....clearly the Computers in Homes opportunity has provided your family with a leg up in a way that you really wanted or needed –

A3 – I'm sure it was the final piece in the jigsaw puzzle – from the point we got that computer in this house, and I was practising typing, loading the business plan, and then things just overtook it

Interviewer - So what do you think makes the difference? In your case, what's made the difference? Because there are lots of other families that I've been to that would probably be getting minimal benefit out of their computer in comparison to you...

A3 – It gave us the physical – step where we had been putting it off, and putting it off, we just didn't have \$2000 for a computer package. There was just no way we could have afforded that. Actually physically having the computer at home and having internet access and becoming a bit more computer literate was like a foundation stone. I mean we could have waited another 4 years to get the business up and running as solidly as it is now –

A27 – and that's why it's worked for us – your question why are we using it and other people don't seem to be – I think that's probably largely to do with our education levels, and our communication levels. We have the inquiring mind and the confidence whereas many of the people that I've seen in this area – I haven't had any contact with anybody else in the programme except before the programme started, and from what I can see of the people that were in the room, I can't imagine the machines being used much more than games for the kids or e-mails back to aunty. So I think it's probably an ability level that you need to be at before you're ready for the computer.

A3 – There are two families that I know of in our school area – one of them I think was – the parent has used the internet access something like 200 hours a month- certainly well and truly got her money's worth. As to what she was doing I couldn't tell you whether it was chat rooms or that – and I know of one child who is on there because his mother – mum works for an airline – and he's - and you can never get them on the telephone – the little boy he's always trying to learn about planes, flying, air routes – that's his interest and that's where he is...

Interviewer - You were saying before that if Computers in Homes becomes a new nest of 20 families – that you would like to see it perhaps – that families get more out of it, or they'd need more – what? training? support? What do you think...

A3 – less rushed? It was just too rushed – do, do, do, do – this is the computer. And I had the ability to use the computer – the manual is a waste of time. I had trouble reading it.

Interviewer - Is this the one on the website?

Yep. Ah – no the one that came with the computer, about what the computer held for us. When it came to then – for my 5 minutes on the internet, as to ‘this is how I want to set up the internet’- this is what you use the internet for – it was ‘blip – blip – blip – blip’ – and I’d **never** used an internet connection, short of collecting mail at work.

Interviewer - So even though you think of yourself as pretty capable, you felt that the training was...

A3 - inadequate. And I’m not the only person that thinks that - Tania who was the school source behind it also feels that way. She wants the families to be able to - ‘OK, this is what we are going to do’ - like a lesson plan – this is what we are going to learn today and we are **all** going to learn it. Yeah just a bit more support and when we left the room with the computers, we were just airily fairly told that ‘oh Actrix has your [e-mail] address, you’ll know it’ – well, I didn’t know it, it took me 3 days to get a clear head from a headache to actually go through the process and several weeks into this programme it was discovered that lots of people had trouble actually getting initial internet access. If we had left there with an envelope that said ‘this is your internet access, these are the steps’. Well I found out for the first time last week that in the back page or somewhere in the yellow pages was the steps to do to get in contact. I had a major headache, I’m fairly intelligent, I didn’t know where the page was, didn’t now what an internet address was, specially seeing my brother-in-law and sister-in-law had the same initials – so I didn’t know which ??they were in and whether our address names had been changed. Just little things – or mistakes this time that **won’t** happen next time.

And a little bit more... [long pause]...one on one, as in – this is how you put your computer together – the little steps that...?

Interviewer - lots of people really needed help...physical set-up of it. Need for a weekly visit...

A3 – Well I haven’t – had a visit; Raymond offered, but then I followed through on contacting the school in the first week of actually having it. Just little bits like – if we haven’t heard from you in a week we’ll contact you – little things like – you receive an e-mail from someone: go to Tools and load that – that’s their address. It was just a bit too much. And I support Tania’s idea that the next time is **not** going to be rushed. That we start the planning process in June, for the next intake in November.

A27 – I think that a home visit for each person where they can get set up at home is an excellent idea. But most of all, people who haven’t had contact with these machines are afraid of breaking them, and therefore just won’t touch it, and this is a crazy notion, because you’d have to try very hard to do something wrong with it that can’t be undone. But another thing that has struck me is the whole idea of the Computers in Homes seems to be to get children in the schools having contact to the computers at home and then drawing their family into the computer world, but the computers that they get at home are completely different from the computers they have at school

Interviewer - Do you think that’s a problem?

A27 – I do, I do.

A3 – Yeah Jacob keeps asking us to get an i-Mac because the school’s computers are...

Interviewer - Well I asked (Principal S) about that and she said Oh no I don’t think that’s an issue because to a kid it’s like pairs of scissors, they might be different types of scissors but they do the same job and kids look at any computer and they don’t think about them being different – so that was her viewpoint but I ...

A3 - but the mouse controls for an i-Mac are very different

A27 – the programme links are completely different and how you go about the task from one position to another are completely different in Windows and Mac

A3 – That’s all right because Dave offered us a – one of their things to see if we’re within – they’ve got a wireless connection

A27 – a kid of six to nine years old can watch you do something and can take the information in a lot faster than we can – ‘to do this you push this, to do that you push that’..but they don’t have the brainpower to think that you are going to something labelled ‘that’ – and if it’s on a different system you’ve got to do a different thing to get that label up and... and they just can’t put that together

A3 – Rebecca's four and a half – she's enjoying it –plays one card solitaire by herself – we supervise... etc

Interviewer - One last thing I want to run past you..it seems to me you are a good example of another part of the Computers in Homes philosophy which is the mentoring side of things. Now that you've acquired a certain level of skill and experience, now you are actually wanting to go on and use that to help other people within the school community...

A3 – but behind the scenes I'm not a very upfront person!!! (laughing, embarrassed)

Interviewer - But that's supposedly the whole thing I mean as you say that people share their skills with family members and ...is that something you think has worked, like – is it something that can help to strengthen the school community?

A3 – I think (D – yes) the theory behind it, absolutely, I just think that this time there's a little bit more... streamlining

A27 – yeah the theory's right, but they didn't get the practice right

A3 – And we're probably a case in point, where a little bit more foundation work was necessary and wasn't done. The idea, the concept is brilliant

Interviewer - And yet from the first time I met you which was at one of the training sessions in the library at school, you were you know determined to not let those sort of things hold you back, you had the confidence to actually say or ask or say "but this isn't working!" or whatever

A3 – Yeah but I was ignored! (laughs)

Other people who don't have those communication skills actually ... (??)

A3 – yes well obviously something has happened because we've got people who went months who weren't connected, and – that fell flat, and I don't want to see that happen again. If things are simply worded and it's step-by-step – manual are excellent if they're worded at a level that people can understand and take themselves through. That whole concept is great – unfortunately the manual that we were supplied with ...um..

A27 – some of it was just plain garbage the way it was written, it just did not make sense

A3 – It was written by techies – it wasn't written for people starting out, and it's been recognised by other people in the programme that it needs to be worked on.

Interviewer - Thank you very much that's fantastic

Participant A25, Time 2, 22-11-04

A25 - ...they've had the same sort of problems with the computers, but...freezing and all this and that – but – I don't think the others communicated...to being able to take it back in to get it repaired – they were like scared or yeah they sort of took the blame that they broke it you know – oh, what are we going to do, that sort of thing.

Interviewer - So they just hung on to them but they weren't using them

A25 - Yeah – Because we met - there were 3 or 4 of them that were the same, like that – two were given back because they'd bought their own... (unintelligible)

Interviewer - So does that mean that Mary-Anne's been able to account for most of them

A25 - Yeah – yeah we've accounted for them but she's still got to see another 2 more but because of her workload and um ... I don't know still what the outcome's going to be but... with me I thought it was really cool you know like – she did her job and I did the job of just ringing around but just knowing that yeah, just knowing what you've found out was really cool ...I don't know I says well I'm still hooked on mine well I don't know maybe it's just me because it's the only entertainment thing for me but..

Interviewer - And yours is going all right

A25 - Nah it's still sick but never mind... um but ah – just other people like I said, that's what I found with – people are too scared to – maybe it's their culture, maybe it's just them, they think that it's their problem and – you know they haven't been bothered to come to meetings and that because they could be scared that it's all those things...I don't know

Interviewer - So to make Computers in Homes work better, do you think –

A25 - A lot more communication, better communication, like -

Interviewer - How do you think that should happen

A25 - Well... like, calling frequently, you know, like really communicating with them

Interviewer - You mean calling in

A25 - Yeah one on one sort of thing or – you know, rather than being um – just like, how can you say being a boss and sitting back and expecting people to call you – you go out of your way just to make them feel more comfortable, make them feel that it's not their problem, you know – have you got any problems? Do you want to talk about it?

Interviewer - So just giving people a computer is -

A25 - It's just - no, it's really leaving them in the lurch, like how I did it it's like, I was only lucky because I had ?? that could communicate. But you know like I saw this - these island people were just – null and void – it was like they were like “oh you know it just stopped, and yeah so we just stuck it in the back room”- and told the kids they weren't allowed to touch it or... (unintelligible) – you know how can we maybe solve this? So I thought well maybe it's just me but I would take it one on one

[Discussion turns to school principal's comments at a meeting we were both at...]

A25 - – well you remember what she said -

Interviewer - Oh yeah she was quite annoyed about it all -

A25 - How she was...it blew up sort of thing – she ah actually says to me earlier Maryann was telling me J rang to say that um she could sorta like take out some of the parts that ah... well she got annoyed and um Maryann just says Oh –no, you know that's voicing your opinion, and you're allowed to, so ... she left it at that. And I don't feel alarmed by it or anything it's just – I don't blame her – they don't know whether they were Arthur or Martha or who they were, so – fair enough

Interviewer - As much as anything I think J's really just catching up with how it all went

A25 - Yeah - well I would say so because by the sounds of it it's almost like “hey I've got a computer for nothing, nobody even spoke about it or you know worried about it...oh but I don't mind it's still working so...” - I mean, God!

Interviewer - But do you think that Computers in Homes is going to keep going, like with new families...

A25 - Well...I think **we** could make it work, like we as families - myself, and ah what's her name, that other lady... *[S--, P3]* and ah there was a couple from the school, like there's that teacher that didn't turn up, her husband's *[P4]* on the Board of Tr- you know sort of people like myself, like you've got one from each culture, if you know what I mean, and maybe at an assembly or something like that, you know – or, what, a parents' meeting you know we could ... get up and say what it really has felt to us, you know, and maybe – by parent talking to parent rather than ...

Interviewer - Mm outsiders

A25 - ...yeah or teachers talking to parents, it's still...you know how you've got the cap on your head so you've got to *[unintelligible]*you know there's parents just listening to what the teacher says, you know

Interviewer - Might not want to say if they don't understand, or –

A25 - Yeah, whereas it's better if we had a group, just like a little group of us just like one Island and Maori and ah European, you know? Like, OK – so if one is a Samoan well we could send a Samoan out or... even if S—*[P3]* went out,

but you'd have to be able to communicate, community-wise, rather than just going and "Oh, where's your computer?" – you know – "Why haven't you done this, why haven't you done that?" it's like... people are gonna just say "Just take it back." And then if I get no – like, lack of communication from the school you know, it's like, I'm just sitting here rubbing my hands going "Oh, goody, nobody's even worried about me. But ah that's just not in me but nevertheless it's like saying the same thing I could go into hiding and cross my fingers and hope that nobody's going to notice me *[laughs]* – I couldn't do that! But I mean I may be the only parent that has communicated with The Ark *[unintelligible – 'officer'?)* – I mean I still ring him up. I just ring up and ring the technician up and – just say to him what's happened on my screen and ...cos I rung...och, God, this was absolutely crap – what do you call them um you know ISPs? – Actrix? They are shit, they are real shit, and I get more information from The Ark, from the technicians, and I mean information's free! *[laughs]* And ah they tell me – if I know I can't do it I say Oh stuff it I thought just tell me how much does it cost me to bring it in, I mean that's how much this computer is to me you know I'd just pay – pay the price. But I don't think other people knew that?

Interviewer - It's interesting, what you say – I mean, one of the things that I noticed when I'm getting together all my information from basically 26 families ... *[explained about the ICI rating]* ... people like you stand out as being really into the internet, but it's interesting because I noticed that the high-connectors are people who are quite sociable, confident, and what you're saying is, you're ringing up The Ark, you want to talk to people, at school, or you're that sort of person, and maybe you need to have those sort of qualities to really get the most out of the internet?

A25 - Yeah well that's what I felt with Maryann, I was a bit put off sometimes with the way she was questioning these people, you know it was like how ...I put them into categories like, if you wear the cap you know you're the boss, she sort of stood out a bit like that rather than being able to communicate freely as ...because I mean she does – she is um – she wasn't actually a parent that got one of the computers like I did, and then she was an organiser sort of a boss sort of thing, and to other people maybe they can see them as a threat, but whereas we went out to visit this one lady and I had dropped her off after our last meeting, a Computers in Homes meeting? I dropped her off and oh we just got on fine, you know just rabbiting away there, and ah when we went out there you know, it was just like normal it was just, cool as, you know, and ah I felt that lady – that she was confident like I was, but she was happy you know, she was content. And there was another Island lady, she was at home by herself I don't know she must be a solo mother or something, but um...you know I didn't like sorta the way the pressure was put on to them like ah Maryann just directed her questions at the kids, about whether or not they were using it, and all this and that – or making the lady feel comfortable making the person feel comfortable before you approach the child as to "do you use the computer?" you know, or um, you know make the kid feel ...

Interviewer - I think she said at the meeting that she thought it's best to speak to the children because the parents might not ...

A25 - Yeah, yeah she did – not telling the truth all the time...but it's the way you approach kids, like yeah Ok so it's, so I'm a bit of a teacher but um ...you know kids again need to be handled with that bit of ...bit of relaxation, they need to feel comfortable with you and you know a bit of a joke or something like that, you know kids can relax easier but if you just say to them "and do you do it – use the computer with your homework?" and the kid's going "Ye-e-s" – you know it's just like "wow that's another teacher ." And um you know because I just understand them... I suppose the teacher's really coming out in me, you know you need to be more approachable to people like that

Interviewer - But if you think of all the parents who don't have the social skills and confidence that you have that if they come up against even little problems they're not going to ring up and ask anybody

A25 - Yes that's why I say you know just maybe once in a blue moon just pop out now and again like even if, like what we've done is is not break away from the major group, from the major control holders, it's having a little sub-committee like ourselves like me, S—*[P3]* and even Maryann you know but ah again another parent

Interviewer - What about T--- *[P29]* do you know her?

A25 - That other lady that was there?

Interviewer - She works for the school

A25 - Yeah? Or even that um like I said that teacher aide that's at the school, you know cos she's another happy-go-lucky you know – but you know somebody that can communicate, and be happy-wise and all that with them-

Interviewer - On a level?

A25 - Yeah on the same level as them you're not going out there and "where's this, where's that" you know, "why, who, where?" *[laughs]* It's like duhh – "God what can I frigging say?" *[laughs uproariously]* – but, that's just me!!

Interviewer - So it's been going a year hasn't it I think it was October

A25 - Yeah yeah cos I think I've got about another 6 months to pay for the internet. Twelve bucks *[per month]* is sweet as

Interviewer - So what will you do then?

A25 - Um, I think I'll be considering getting another one – getting my own. But um it's just like I said at the moment, it's just, this is just my pastime, it's just here when I need it, it's – like this - or when TVs stink or, you know or like I've been sleeping during the day and then I'm staying awake right up until about 2 o'clock in the morning, but it's not because of this it's just because I just lack sleep and if there's anything that I'll...because God we had a party on Saturday, Saturday night it was Dad's birthday well his belated birthday party, and his birthday was actually last Thursday we thought we'd have dinner and...my brother from Australia, it was his daughter, she came over with her new grand- her son, and he's only about seven weeks old so I thought you know we'll make a bit of a video camera and have a bit of a party. So we did, we had dinner, and we just had a few cans, but God everybody died eh! And I mean I don't drink, but shit here I am sitting here with my blinking can, and I'm going "Blaaahh!" *[belly laugh]* ...and she went home and then my partner was just watching bloody sports and he died and I'm going...

Interviewer - So you'd be on your own

A25 - ... "oh far out!!" and I don't even drink. But then ah they were telling me, like I was lying here, and they were...in the room, and they were talking about bloody sports, so I thought "Shit!!!" *[interviewee laughs a lot throughout]* ...and what time's the sports on, and they were telling me it's on about half past three and I was like "God it's like 2 o'clock now, about 1 o'clock and I thought Oh shit, can I do it, like I might as well ... stay awake and wake my partner up *[for the sports]* and then I'll go to sleep. God I did eh - I stayed up til about half past three!! But I don't talk²¹ it's – oh well I'll tell you I was - I'm fascinated at the way these Kiwis speak – it's a new lingo, it's - I don't know how you would see it I mean you'd probably go "Shit I wouldn't know - even understand it"... but these, these people have got a real fascinating way of talking, it's –

Interviewer - Where – where are they?

A25 - They're from New Zealand, they're in Kiwi rooms²² – and it's on Yahoo, it's a Yahoo chat room. But you know it's all crap, I mean they blinking come on there and they're so tough and that. And I don't even talk you know like I just sit there and just watch it, it's just amusing eh. And then one would come on and *[you?]* go "is that new or something?" but it's the way they've written it. It's re-e-ally – I don't know I'm fascinated! *[laughs]*

Interviewer - Is it all sorts of abbreviations and that

A25 - Yeah it's like – shall I say, we would say "is that you?" But to them it's like "i-s-h (is) – d-a-t – (you) y-e-w"? and then they've got these little expression things²³, and it's just so cute you know? And it's like – "Duhh??" – I'm just cracking up eh but – my partner can't understand why I just do that

Interviewer - Are you just sort of sitting back and watching them socialising, what's going on

A25 - Yeah! Just the fascination like there's a whole group of them. I do this every day – I mean even if I'm just sitting here I might just turn it on and just –

Interviewer - Do they know that you're there?

²¹ Here she refers to online chat – she has been indicating (gesturing to) the computer / internet adjacent to where we were sitting, throughout the interview. At this point I wasn't aware of who she was referring to

²² At this point I understand she is talking about online chat

²³ She may have meant emoticons

A25 - Yeah! Your name is there and like people come online and they try and – ah how can I say – [pm??] they call it, like they'll come onto your screen and talk but you can just ignore them, which I normally do, and then they can talk to you in the room, like out on the screen

Interviewer - And they don't mind

A25 - No – well, like I said it depends on who you are or what you are but – they talk in there, but I just usually just sit there and crack up eh I mean God... and then - I've got all these youngsters around and they all want to get into this fight?? like there was one girl on Saturday night her name was Jim Beam's Girl or something – and I could hear what she was saying, she was putting down this one person in particular who just happened to be a Maori – oh mate and then the next minute eh the whole room had just spun against her, and like, she was, she had the gall to just still stay there, you know and I thought "Get the fuck out of there!" [laughing] God these people were calling her frigging all sorts of names and I mean she had to say ... but it was like a crack-up I just thought "Oh you poor bitch!" But that's what I mean that's what I find fascinating yeah it's amusing as well as ... and then you can tell there's a certain time for certain ages, um – one guy like he was 51, and ah I says to him "Why don't you talk to everybody?" he goes "No cos they all think I'm too old" and I'm going "Oh, God, you know, there has to be some life for - for us oldies" I said – but if you just imitate what they do, or not even so much imitate, but just – go along with them the same as what you do in real life how I say if you can communicate with people better on the outside, then you can communicate with...anybody. I mean this²⁴ is just a screen, and I think that's what needs to be told, is - don't be scared of a screen I mean as long as you don't give out your details, make sure you know that you're hiding you know like – read everything don't just write down all your bloody details I mean my partner mate he gives out my details! He gives out our phone numbers! [laughs] It's like – "Duhh!" I would never, ever do that! But ah you know it's like they²⁵ must be able to understand those sort of things – but if you stay away from the chat rooms that's fine but if you communicate with other people, I suppose it's just – communication skills you just need your own personality skills, is more the one than ... But I just think that's a-ma-a-z-ing, man honestly eh they are just so amazing, like if you are a an Indian, and there is a certain type of Indian that's come online – Ohh! I just crack up eh [laughs] God I mean they give you they send you cameras, they send you all sorts of things these Indians – and I mean everybody knows in these rooms that they are just there for marriage – they want to marry somebody from here, and it's like Oh God but they just won't get the message eh. And like I said to the group are there certain people that are always in these rooms?

Interviewer - How do you know they are Indian?

A25 - Cos they tell you. You know like they always say ASL and it's like age sex and location, and – of course they won't tell you where they're from, they could even lie but then if you've been on as long as I have you get to know the way they speak [laughs] I mean "Hi" like "H-a-i" it's like "Hello [to self]" you know - you start to worry a bit and then they go "Love for me please" that sort of thing [laughs] But it's like "hang about...!" you know where are you from?! It's just like "Duuhhh!" - you know then I just ignore them but – if you can't have a decent conversation with the person then I just don't bother. But it's just amazing eh it's just fascination what they're...[unintelligible]

Interviewer - Better than watching TV?

A25 - Yeah! [laughs] Yeah cos it really does happen! Like I'm amused that the way these people even go out and meet each other, like – I could not go any further than this – honestly, I could not go any further than this, this is my limit. And like everybody, I've still got this damn freaky person that just keeps coming online eh, I mean he's sent me his phone number he's sent me everything and the guy's married! He's married! And you know I just play around with this sort of thing eh – it's like keep him at arm's length. And they're going "oh good God you know, give up [mate? - unintelligible]" you know I've thought Oh well, carry on – so he's still comes on but you know it's like that is as far as you go, it's just there, for me that's all you are is you are just a screen, you're nothing to me in real life, but oh it's just fascination eh. But other than finding everything else out, if and when it can stay 'clean' like stop breaking down on me, see cos right now there's something wrong there's like ... ah I think it's an Explorer problem that it won't let me open up any other windows like um programmes I can't even open up my email without this Microsoft thing coming on saying 'you are unable to der-

²⁴ The computer

²⁵ I think she refers to "other" Computers in Homes parents who are not confident with the internet

der-der-der...but he's saying what may have happened was, again because I've got all these young kids around you have to really be careful because they just flick anything and touch anything, and they have – they have really... and so I just leave it for now and like I said – so long as it doesn't cost too much to repair I don't mind moving it, I mean as long as my communication is open, I'm fine! Doesn't really bother me, but ...

[On to survey Qs...relevant comments reproduced here]:

Re positive or negative effect of internet, in hindsight I don't think she really understood the Q, but said...

A25 - Yeah I would say it does... I would say like there's certain friends on there that have a positive – makes me think positive, makes me think twice. Um...yeah – there's other lives, there's another life for you sort of thing, like, besides this life here *[laughs]*

Interviewer - Very positive or just kind of positive...?

A25 - Kind of positive

Interviewer - Miss the internet?

A25 - I'd miss it but hey life goes on, you can do without it. I would probably just turn around and take of outside and go shopping or – have more time out sort of thing rather than just sitting here

Interviewer - So in some ways – it's there so you use it?

A25 - Yeah. And if it isn't, it isn't. I'd be like that sort of thing. You know like I've said sometimes days are boring, or - my days are all flipping boring if you ask me but *[laughs]* you know there's always something to do, but it's just like, when I have absolutely nothing and it's so quiet like, my partner goes away all day and it's like ... work's done and it's like, Ok you can get onto that²⁶ before you realise it it's time to go and pick the kids up and you know in another way it's an interference, in my life, as well as it's a – ah – it's good for your life sort of thing – it keeps me communicating and specially when I'm just sitting here and there's nobody else to communicate other than *[nods towards bedroom]* in there²⁷ so...

Goals in using internet?

Staying on top of events – how important?

A25 - It is *[important]* with him *[father]* like I keep him on top of what's happening where we're from – like down the line there, or ah like I said when and if I get it repaired, it's – cos even he's not really interested but when he does come out²⁸ you know I just sorta like, turn it on to his things and - even J-----, the grandson, like he's still right into his – whatever he's into. He wanted to know about plants – like look at his stupid plant over there – tut! *[laughs]* We've got a red plant and he's got a corn and something else some sprout thing in the jar in there – and ah like that he really gets into his work like that. I just let him do that bit – but when it comes to his 'dub-dub-dub-dot-nickelodeon-dot-com' Nickelodeon crap that's when I go "Oh whatever". But before I had the other nephews here and J----- used to have to fight with them for the games, that ah there's a certain game that is already on there, I can't even remember the name – these kids just all fight for it. You know so – yeah, it was communal to everybody – everybody sort of used it but – no it does get used for their right things

Back to Q – is it important to use it for news...etc

A25 - No – I'm more of a TV ...not really important – only Lotto – if you call that important!

²⁶ Internet

²⁷ Her elderly father

²⁸ Of his room

APPENDIX 5: COMPUTERS IN HOMES

The Computers in Homes (CIH) community ICT initiative is unique to New Zealand although similar schemes are to be found worldwide. Modelled on the Books in Homes initiative (also a New Zealand innovation, distributing free books to low income families) and launched by the 2020 Communications Trust, CIH began as a pilot in 2000 funded by the Ministry of Education. CIH aims “to provide all New Zealand families who are socially and economically disadvantaged with a computer, an internet connection, relevant training and technical support” (Computers in Homes, 2007).

Since the early days of pilot projects in Wellington (Newtown), Auckland (Panmure) and Hastings (Flaxmere), CIH has grown significantly both in the number of communities within which it is operating, and in the scale of funding that is now being directed towards it through the New Zealand Government’s Digital Strategy. From four communities in 2002, CIH is now established in over 200 community and educational settings in more than 20 cities and regions of the country.

Detailed information about how the scheme operates is available at <http://www.computersinhomes.org.nz/>, while “Frequently Asked Questions” (FAQs) are answered in a document prepared by Computers in Homes and made available by the National Coordinator as a comprehensive guide to the scheme’s philosophy and practice (Das, 2008):

FAQ’s about Computers in Homes

Short Description of Programme

The 2020 Communications Trust created the Computers in Homes programme to impact the literacy of families in low-income communities in New Zealand by providing them with a refurbished computer, basic ICT training, 6 months free internet access and technical support for a year. Parents become involved in their children’s school and connect with their learning. They model life-long learning to their families and have achieved unexpected results like completing university degrees and running businesses online.

Problem Identification

What serious problem or challenge with broad significance does your use of technology address?

In Aotearoa/New Zealand there are significant numbers of families in low-income communities without access to a computer or the internet for their children's education. Many of these families have been disadvantaged because of unemployment or isolation and have little or no access to technology, often not even knowing someone who owns a computer. This has far-reaching effects for the children's educational opportunity when they cannot research their homework and produce results on a par with their peers and what is expected for success. Because their parents may have low academic achievement owing to socio-economic factors, this can become a self-perpetuating cycle of low achievement and unemployment with all the accompanying social problems. These communities tend to reflect poor statistics for education, health, housing, transport, employment, poverty and crime. [2020 Communications Trust](#) works towards breaking these cycles of social dependency via its Computers in Homes programme. Also in isolated rural areas there are further restrictions owing to lack of basic services like access to power and telephone connections to homes.

Explain the context and existing conditions that you are trying to improve or rectify.

The context for the Computers in Homes (CIH) programme is low-income communities and working via "low-decile" schools. The NZ Ministry of Education categorizes all schools on a 1-10 scale according to the parental income of the demographics, and CIH works with families at the low end of the scale in decile 1-4 schools. These schools report that parents have minimal involvement in their children's education and rarely attend school functions. This can be because they have had little success themselves and are uncomfortable in the school environment, are working long hours and shift work at low-paying jobs, or owing to distance factors and lack of transport.

The existing conditions as illustrated by the 2006 NZ census show that in e.g. the Far North region of NZ, where some of the above factors apply, 47% of households with school-aged children do not have access to the internet, equalling at least 2700 Far North families. (Far North school principals claim this is a conservative figure.) This scenario equates countrywide to approximately 100,000 families in low-decile communities without basic technologies. Of course there are many more thousands of low-income families in higher decile schools, so this figure is also conservative. Computers in Homes has been responding in an ad hoc fashion as minimal and sporadic funding has been accessed, serving 4000 families so far since the year 2000. Specifically what we are trying to rectify is the lack of access to technology and internet services that many New Zealanders take for granted. Children from families that do not have access will continue to be disadvantaged in their educational opportunities.

Description of Technology Application

Fully describe the technology application. What technology is being used? How is it being used? Who is responsible?

To be part of the Computers in Homes project, parents need to first complete 20 hours basic computer and internet training at their local school. As low-decile schools do not often have a training suite, CIH provides a pod of 8 refurbished machines similar to the ones families will use at home. After training is complete and families have paid a nominal buy-in contribution to their school, they receive a computer to take home, a free dialup internet account for 6 months, technical support for a year and ongoing mentoring through the school. The school retains ownership of the training pod in recognition for hosting the programme and is expected to open it up once or twice a week for families without landlines at home to use for internet access. A \$50 join-up fee/family is paid to the school to cover any incidental costs.

The technology being used is refurbished computer equipment from ex-government and corporate upgrades. These are either donated or auctioned to the [CANZ](#) (Computer Access NZ) recyclers who in turn security-wipe and refurbish for re-use. These are then sold to schools and community organisations like Computers in Homes. CIH buys typically Pentium 4 PC's with 512MB-1GG of Ram and 20-40GG hard drives, 17" CRT monitors and 56K modems.

Operating systems licenses are bought by CIH under the Microsoft agreement with CANZ computer refurbishers. The machines run XP-Pro and Office with free AVG virus protection. The internet connection is a fully filtered and fire-walled dialup service which screens out "undesirable" sites but offers an option for social networking.

Parent involvement is crucial to the CIH programme, as it is not merely a hardware dump of used equipment into poor households. The parents, grandparents and wider family members learn how to use the computer, how to search the internet and use email; what e.g. Bebo and Facebook are so that they are on board with the technologies of their youth's world. In this way they are responsible for monitoring the use of the computer and internet while connecting with their children's learning. Parents are also expected to keep in touch with the school via email and schools are in turn expected to send newsletters electronically and post information on their websites for families to access.

The school is responsible for finding suitable tutors and technicians from within their community and for hosting the programme. The CIH team assists with project management and administers the funding. The CANZ recyclers offer a 6-month warranty on their hardware

and liaise with the school technicians to keep the PC's in good working condition for the families' education.

Families without a landline telephone at home are still included in the programme by having access to the CIH training pod at the school, and by the children using flash-drives to take research home or homework back to school for printing out. In some areas 2020 Communications Trust is facilitating local meetings toward potential installation of Wi-Fi networks to serve families without telephones and those in remote regions with no services available.

Who is benefiting from your programme?

The first people to be benefiting from Computers in Homes are the children. CIH was initially begun to impact the literacy of children in low-decile schools. The theory was that a computing culture in the home, with parents adept in using ICT and promoting its use for education, would raise the achievement of their children at school. It had been observed that children with a computer at home were more confident at using computers at school, so those without were getting left further behind. At the time in 2000 this was referred to as the 'Digital Divide' and 2020 Communications Trust were committed to addressing that. Now they work to provide digital opportunity as defined by those who need it.

The next level of benefit is the whole family. Soon after CIH began, it became evident that parents, grandparents and other family members were learning how to use the technology for their own growth and development as well. Mothers began enrolling in teaching, social work and cultural degrees at university; fathers wrote their own resumes and applied for work that was previously out of reach owing to a lack of computer literacy; some began their own business enterprises from home selling their artworks online from remote regions with previously restricted markets. Others used email, MSN and their own websites to contact family members overseas and research genealogy. Families isolated by distance or circumstance felt connected to the outside world and able to contribute to their children's homework in a way they had never done before. They reported slashing their toll-bills by being able to email and stay in touch within their budget. The rise in confidence and self-esteem is difficult to measure, but is evident in their increased involvement in their communities.

Following on from this, the whole community benefits from the increase in its members' social capacity and contribution. What began as a child-literacy project evolved into a family-literacy

programme with also a community-literacy focus. By expanding the model as far as possible, 2020 Communications Trust hopes to benefit the whole of New Zealand society.

What processes or systems are in place to deliver this technology application?

The process for implementing the programme has been by 2020 Trust first applying to government for pilot funding for individual schools on a case-by-case basis. CIH takes enquiries from interested schools and provides information and expertise to ascertain if the school is committed to hosting a project. If and when funding is secured, the school community is then assisted to run CIH for a designated number of families. A formal Starter Pack is produced and distributed to interested schools, providing a step-by-step guide to running a project, with checklists, contacts and resources included. CIH visits the schools to make presentations, create timeframes or answer queries and is always only a phone call or email away to assist with implementation and trouble-shooting.

Sponsorship relationships established by CIH with technology suppliers and internet providers ensure that equipment and services to the projects are cost-competitive and that CIH schools receive special service. These suppliers are aware that we are dealing with non-users to new-users so they pitch their services accordingly with understanding telephone support and technical advice.

Explanation of Leading Edge or Breakthrough Use of Technology

Why do you think that your use of technology is worthy of recognition? Describe if it is a new technology or a new use of an existing technology. How can it be distinguished from exiting uses? Explain how it surpasses previous or current solutions.

Computers in Homes is worthy of recognition for its effectiveness using a simple concept in the use of existing technology. The technology is equipment that has been discarded by high-end users of ICT and refurbished for the educational use of low-end users of ICT. Educational software is loaded onto the machines and a filtered internet service is configured to make new-users more confident in the use of the World Wide Web. Often non-users have heard only negative reports about the internet via television and are keen to protect their children against the potential dangers.

CIH surpasses other solutions because it is not solely a hardware dump to move on outdated computers. It is a fully supported and thoroughly thought through programme that addresses the many implications of rolling out ICT equipment to new users. Other programmes that have provided equipment without training or technical support have fallen short of expectations because once the machine falters or fails, the new-users have no resources to maintain it. CIH

encourages the whole school community to take responsibility for the technological education of its members, by school staff being involved in choosing families, tutoring the classes for parents and providing ongoing mentoring support. It is an effective way for parents to become involved in their children's school and for the school to get to know their families better. What makes CIH different is that it is not about the computer per se but about how technology can be a catalyst to improving family literacy. The school benefits from the elevated success of its students and better educational outcomes.

The 2020 Trust also addresses the end-use of recycled hardware by its connection between CIH and CANZ national [eDay](#), which promotes the responsible disposal of ICT equipment once it has reached the end of its functional life. We do not want CIH computers to end up in the landfill, so awareness is raised around e-waste at the same time. eDay is a winner in the 2008 Green Ribbon Awards for community action by volunteers and not-for-profit organisations.

Computers in Homes does not use new hardware for a number of reasons. Its aim is to introduce families to ICT, not to be a handout programme of new computers that could then be target for theft or on-sale. By families having to show commitment to the programme by making a financial contribution to their school and by completing training before the computer goes home, it gives them more ownership of the process and does not create further cycles of dependency. After the first 6 month's free internet they are expected to pick up the cost themselves at a subsidized rate for CIH families. After a year the family is expected to maintain the computer itself and be prepared to upgrade or replace it as need be. One exception was made for a CIH project on remote Chatham Island two hour's flight offshore into the Pacific Ocean. New components were used for the 20 families because of the scarcity and expense of technical support and 2020 did not wish to contribute to e-waste on the island. This sort of forethought sets Computers in Homes apart from many other social ICT programmes.

Evidence of Contribution

How do you know that your application of technology is making a contribution?

We know our application of technology is making a contribution by the many testimonials from parents and schools as to the difference CIH has made to their families' lives. We receive emails of thanks with updates on what they are using the computer for and our regional projects have blogsites which carry feedback from users. At 2020 Communications Trust 10th Anniversary, one of the main speakers was Toni Kahu, a mother from the first CIH school,

who has since graduated with a degree in teaching and is now a leading ICT teacher. Toni completed her whole degree on her CIH machine and her children are all now high achievers in education. A Samoan mother of six children had poor vocabulary and no literacy in English until she became a CIH parent, but soon took on extra literacy programmes using her computer and is now completing her university degree. A third mother was a cleaner all her working life, but within months of gaining confidence and skills via CIH she secured employment as a doctor's receptionist. The examples go on and on and one of the greatest contributions is how parents are given the opportunity to model learning to their children.

Presentation of Measurable Results

Describe the methods you are using to measure your results. How are you reporting your results and to whom? To whom are you accountable?

The methods used to measure the results of CIH include survey questionnaires, warrants of fitness checks for the computers, interviews with families and school staff and email feedback from users. Results are reported at an academic level by researchers as papers for presentation at conferences and as Masters Degree or PhD studies. Accountability reports are made from the Computers in Homes programme to the 2020 Communications Trust and all funding agencies, which include the NZ Ministry of Education, Department of Internal Affairs, the government's Digital Strategy and corporate sponsors. We are accountable to all the above and must adhere to clear outcomes and deliverables with quarterly milestone reports.

Description of Potential Negative or Unintended Consequences

Describe any outcomes that may not be beneficial that you have considered. Who might consider your application problematic and why?

The first unintended consequence of Computers in Homes is that demand has far outstripped supply because of a lack of funding and paid personnel. It was initially hoped that central government would pick up the model and mainstream it rather than bit-fund small projects or individual schools. As well as funding for project costs, there is a need for more personnel to help manage from a central and regional perspective. An outcome that is not beneficial is that dialup internet is slow and broadband costs in New Zealand are relatively high. As families become more ICT literate they become dissatisfied with dialup access and some complain that CIH does not provide free broadband. CIH agrees that broadband is the superior option but fiscal restraints do not allow this, so we have to weigh the benefits of connecting more families to dialup for less. We also find that dialup discourages indiscriminate downloading of non-educational material from the internet while parents are coming to grips with new technology.

Discussion of Replication Potential

Describe how your work might be a model for others to emulate. Could this application be put to use in other places or contexts?

The original Computers in Homes model has been successfully replicated and emulated to suit numerous places and concepts. There appears to be no restriction as to how large a scale it could be replicated on. It began as an urban project in three city suburbs with good access to telephone, internet and technical services. Its scope was a one-school/25 families model with the school principal as project champion and 2020 Trustees being very involved at a personal level. As the programme has grown to accommodate over 200 schools, more and more control has been devolved to local communities, and other agencies have applied the model to fit their needs. It is not unusual for smaller schools to collaborate into clusters to run CIH, and the model has been enthusiastically adopted by rural areas despite a lack of services at times.

Although CIH does not usually deal in laptops, when a corporate offered a number of working machines, these were deployed in areas where families had no electricity at home. The children bring the laptop to school in the morning to charge up during the day, and get 1-2 hours of homework done on battery power at night. A Maori tribal education authority worked with CIH to implement CIH over 13 of their remote rural schools and is now developing its own Wi-Fi internet service for its communities (YouTube search “Tuhoe”). The Rural Education Activities Programme [REAP](#) implemented CIH into its literacy programme for adults which involves individual tutoring at home as well as the standard CIH training.

The initial interest in CIH at government level was from the Ministry of Education, but as results began to indicate positive social change, it gained recognition from other departments. Housing New Zealand Corporation (HNZC) saw that CIH fitted in with its criteria for Community Renewal programmes and has run projects in partnership with the 2020 Trust to generate pride in community and neighbourhood. Refugee Education officials decided that a specialised CIH programme would help resettle newly arrived refugee families into the NZ education system while keeping them in touch with their countries of origin via the internet. The scheme that evolved incorporates interpreters, childcare and transport to help families complete training, and provides a family liaison visitor to assist and mentor for a year. It is especially directed to new refugee families with secondary-aged children, to immediately engage them in education and work skills before they reach leaving age.

CA Pacific, a branch of an international company supplying anti-virus software to schools has partnered with 2020 to run CIH in two NZ schools and develop an ongoing relationship with them. CIH also answers enquiries online and sends its Starter Packs electronically to the Pacific and as far afield as India, Africa, Canada, USA and UK because the model is replicable on an international scale.

Recognition of Contribution

Does CIH draw upon the intellectual property or substantive contributions of others who should be acknowledged?

The idea of Computers in Homes was inspired by another NZ programme named Books in Homes, which believes that if there are lots of books and a reading culture in the home, then this will benefit a child's reading achievement at school. The 2020 Trustees thought a similar idea would work with refurbished computers. Ongoing contribution and inspiration is gathered via feedback and ideas from school principals, their staff and most of all from the families themselves who welcome us into their lives and hearts. It is a privilege for us to be part of their communities and work together to further the development of New Zealand youth.

The June-July 2008 edition of Mana Magazine features an article on one such community who graduated from a Far North CIH school.

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