HOUSEHOLD LIFE AND SOCIAL USE OF THE INTERNET

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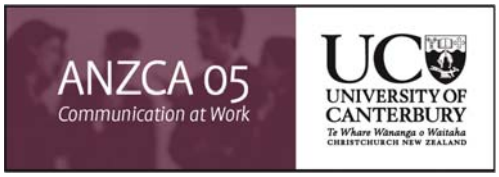

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Abstract

Much of the recent large-scale data show that by far the most popular use of the Internet is to pursue social connectivity, especially through email. What has also become clear is that the interplay between the Internet and daily life at home is complex: the online world has become so intertwined with the "real world" that we cannot study the Internet as a unique entity (Kiesler, 2004). Moreover, making quantitative assessments of apparent change in people's communication behaviours in connection with new communication technologies is problematic. For example, while we might draw certain conclusions about numbers of people online (such as that the digital divide is shrinking) or whether they tend to spend their online time on social, informational or other activities, in practice even distinctions between the online and offline can be deceptive because of factors such as "churn" (Anderson, 2004), also described as the "stop-start nature of computer use"(Merkel, 2003).

This paper explores conflicting arguments about the efficacy of Internet access as a means of building low income community capacity by using data from a 2004 study of Internet access among low income novice users in New Zealand. Findings imply efforts to close the digital divide need to move beyond getting the low income 'unconnected' online, to a consideration of the everyday Internet experience once people are connected, and in what way this experience may relate to transitory Internet use. I describe changes in social use of the Internet, primarily through the use of email, over the early period of connection within a number of households. I propose that aspects of household life have a critical role to play in the extent to which that social purpose persists beyond an Internet honeymoon period. A longitudinal and contextual approach has been essential in researching 'communication at work' in the shifting communication technologies context.

Introduction

The digital divide is a popular metaphor for disparate access to and ability to apply information and communication technologies (ICTs) to improved life chances, a gap more dryly described as "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). While some studies focus on counting the haves and have-nots, or categories of ICT advantage and disadvantage[1] (Norris, 2001) and how these are categories are changing in the process of diffusion, others regard a binary approach to access as limiting (Hargittai, 2004; Merkel, 2003), preferring to consider for example the relationships between people and technology, and the significance of everyday life in the technology adoption process. The study reported on in this paper fits the latter approach, seeking to make a contextualised assessment of technology uptake in low income families who have previously lacked access to the Internet.

While the policy-making response to the digital divide is generally about increasing access -through schemes such as Computers in Homes [CIH] in New Zealand - in order to "fix" the social deficits represented by low income communities, attention must be paid to much more than the simple matter of whether or not families have an Internet connection at home. This paper takes a "technology-in-use" (Merkel, 2003, p.5) research approach aiming to account for how people actually use the Internet in the household setting, so that the role that it can reasonably play in building community capacity can be

[1] In NZ, the "groups most likely to be disadvantaged … are: Maori 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).

assessed. It is critical that this role is clarified, since the public is urged by government, business, education and community sectors to agree that ICTs are socially transformative:

- the Internet must be made available to the 'technologically destitute' (*Computers in Homes Draft Progress Report*, 2001, p.5);
- Internet access should be democratised because economically disadvantaged individuals need to get online to improve their chances in life (*Digital Strategy: A Draft New Zealand Digital Strategy for Consultation*, 2004).

Such assertions imply that increased Internet access is required to improve social outcomes. The reality is arguably much more nuanced. For example, the study of New Zealand's CIH scheme reported on here is distinguished by an element of *transience* that has emerged among the research participants, both as an actual family dynamic and as a more abstract Internet transience. This characteristic provides a lens through which to interpret the outcomes for these communities once Internet access has been provided. Impermanence of household arrangements as well as Internet connection emerges as a clear factor in the extent to which families, and the school/neighbourhood community of which they are a part, are empowered or otherwise affected.

Elsewhere, this transience has been called *churn*: in the Chimera studies, based on longitudinal interview-based datasets from the UK and Europe, the term 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 – many just pass through' (Anderson, 2004, p.1). Behind the apparent diffusion of ICTs lies an "around 10% per annum Internet dropout rate in the USA" (Anderson, p.1): the implication in the digital divide context is that the online population is in a continuous state of flux. Anderson's appropriation of the term[2] - borrowed from the commercial sector to denote the transitory nature of a customer base - as a description of a type of "stop-start" use (Merkel, 2003, p.21) may also be contested, but by whatever term the scholarly community agrees to label it, the volatility that appears to be a factor in late technology adopter, low income populations implies that any quantitative measurement of Internet use or access can only be valid in a limited way. Users may be transitory, or become Internet dropouts for all sorts of reasons – just as some people temporarily experience financial poverty and then recover, whereas others suffer persistent poverty for extended periods of time. Likewise, most people are 'information poor' at times for a variety of reasons, but only some remain persistently so (Chatman, 1996, p. 193).

Since people who are likely to suffer from either transient or persistent poverty are substantially different groups, the policy responses to these two phenomena must also be different. It seems likely that this principle applies to Internet poverty[3], and consequently

[2] It has been argued that *churn* should more specifically and correctly be used as a term describing customers switching between telecommunications or Internet companies, as opposed to customers opting out of Internet service altogether.

[3] This is another contested term, but useful for the fact that important Digital Divide nuances (how persistent or fleeting a state is a person's lack of access to online information and networking resources of

the characteristics of Internet transients, who move on- and offline and back again, versus those who are likely to remain persistently Internet poor must be known with more certainty. If the distinctions between different types of Internet poverty are not clearly understood, an apparent rise in the percentage of households with Internet access can lead to misleading conclusions that become comfortable articles of faith, such as that the digital divide is shrinking. This belief is not shared by all. A recent media release announcing that the World Bank believes the digital divide is 'narrowing fast' (Atkins, 2005) brought outraged responses from the Digital Divide Network, a listserv consisting of Internet and community researchers and activists. Even the most basic assumptions about what the Internet can do 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. (The real digital divide, 2005,p2)

If there is any truth to this claim, then the hackneyed premise that home Internet access is a requisite for empowered community is almost certainly redundant. Has everyone been barking up the wrong tree in focusing on providing computers and internet to individual households?

The gains to be expected from home computer access remain disputed, with claims for both significant social benefits, particularly educational (Prensky, 2001; Zardoya & Fico, 2001) countered by recent research that insists 'the less pupils use computers at school and at home, the better they do in international tests of literacy and maths' (Clare, 2005, ¶ 1). Internet research findings must continue to find their way to those responsible for public policy, legislation and social spending, so that resources are invested most effectively.

Computers in Homes (CIH) study

The experiences of low income novice Internet users taking part in New Zealand's Computers in Homes (CIH) programme became the focus of the qualitative study reported in 2002. CIH provides recycled computers with free Internet to primary school families unable either to buy their own computer or to fund an Internet account. The scheme makes use of donated computers, while operating costs are largely met by the Ministry of Education. Goals of the programme include 'to empower low socioeconomic communities with the necessary tools and skills to become active participants in the online world' (Das, 2003, p.1), while clearly it is hoped that once a family has benefited from the scheme and returned the computer for other families, they will budget in order to be able to buy their own computer. One aspect of community empowerment sought through CIH is a strengthening of ties between school and families, and between families, via email and attendance at parents' meetings.

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which others make daily use?) are implied, because poverty is a multi-dimensional state with a range of reasons and consequences, as is lacking ICT access.

The present study favoured a qualitative research orientation, reflecting the move to 'post-positivist' (Lindlof & Taylor, 2002, p.9) approaches in Internet research in recent years. This increasing interest in qualitative methods implies that quantitative inquiry may be too simplistic in communication studies, or at least too one-dimensional, to capture the experience of social actors in Internet contexts. The methodological imperative in this ethnographic study has been the capturing of people's experiences with Internet access – as new users - over a period of time, and how they actually use it in the context of their daily lives so that the complexity of uptake can be understood. The goal therefore was to do the research in such a way as to gain a gradual insight into the ways in which the computers and Internet connections were being used within different household contexts.

This in depth longitudinal approach required the building of researcher-participant rapport, a process facilitated by negotiation over many months through 2003 at the three different CIH school sites. Data for this study were collected over approximately one and a half years, commenced formally in the latter months of 2003 and concluded mainly during 2004. A second phase, begun in the latter months of 2004, is coming to its conclusion at the time of writing. Multiple methods were used, including interviews with both the adult participants in CIH and with school principals and CIH staff, completion of surveys, observation of CIH training and meetings, and participant observation. These have permitted developing interpretations to be checked from different perspectives, as outputs include both qualitative and quantitative data obtained from twenty-eight CIH scheme participants over two separate phases, together with observational data and interviews or commentary from school principals and CIH personnel. Initial quantitative data analysis was carried out using Excel, and ongoing analysis of interview transcripts has used open coding (Strauss & Corbin, 1998) to isolate emerging themes and interpretations. These are derived also from the quantitative data, so that continuous comparison and contrast have operated as findings have emerged in a more or less seamless collection/analysis process.

Data to date from 28 members of 23 households taking part in the study suggest it is important for proponents of such community schemes to consider a number of situational factors affecting the longer term enthusiasm the recipients of free Internet have for pursuing a range of Internet goals, including social ones. The study offers insights into very different *types* of Internet uptake, as well as endorsement of a type of 'churn' or stop-start process among new users: having access does not necessarily mean an individual is now 'cyber minded' (Anderson, 2004, p. 5) or no longer to be counted in the digital divide. Practitioner and policy priorities should include identifying the ways in which people are actually using the Internet at home, those who are at risk of dropping out, the risk factors for abandoning it, and what gains can be expected from home access.

Findings

Characteristics of the sample at Phase 1

Twenty-four adult individuals (19 women, 5 men) from 22 households[4] with children at three New Zealand suburban primary schools targeted for assistance through the CIH scheme were interviewed and surveyed between October 2003 and March 2004 using a combination of demographic, attitudinal and statistically oriented questions. At this initial phase of the study, fifty percent of the group held no formal educational qualifications; around sixty percent were bringing in less than the average New Zealand household income; ethnicities were approximately 40% Māori, 35% European, and 25% Pasifika. This ethnic mix reflects that of the South Auckland suburbs in which the study has taken place, where there are higher percentages of Māori and Pasifika families and lower proportions of European people than in NZ overall.

In general terms, the group showed strongly positive views about the impact of the Internet on their lives[5]: more than three quarters of those interviewed rated it as having a positive or very positive effect. However, on an 'Internet dependency' (Jung, Qiu & Kim, 2001, p.517) question[6], little more than half said they would miss the Internet quite a lot or extremely if it suddenly vanished. Regarding specifically social goals in using the Internet, of the six goals presented for rating:

- 42% said they rated "expressing yourself or your opinion" as important or very important to them;
- 44% rated "making friends" as important or very important; and
- 78% said "getting advice" was important or very important.

Two other goals rated as important by one half of the group in each case were "staying on top of events" and "doing business and work" - less obviously social goals but nevertheless connected with knowing about and interacting with other people. On the other hand, "playing or amusing yourself" was seen to be comparatively less important, rated highly by only one quarter of the group.

Around two thirds of the sample reported using email weekly or daily, but "communication with others such as in chat rooms, IRC or message boards" was much less popular, with less than one-fifth saying they used these with any frequency (weekly or daily). A little over half of the 24 using the Internet reported going online at least once to several times a day, but only four of the twenty-one respondents using email at all said they spent more than five hours per week on it. None of the respondents said they were sending more than ten email messages in a day. Most people were sending email most

[4] A further two participants from households already in the sample were included in Phase 2, as well as an additional married couple from a new household; by the time of writing therefore there were 28 individuals involved, from 23 households.

[5] The question was 'Thinking about all the "pros and cons" of the Internet, would you say it has an overall positive or negative effect on your life?' and respondents rated the question using a 1-5 Likert scale where 1 is very negative and 5 is very positive.

[6] '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?'

often to friends and family, but not really at all for contacting "people related to work". Less than one third had set up a group mailing list. One quarter said they were spending less time with friends and reading newspapers less frequently, while one half were watching less television. Around one third were talking less on the telephone.

In summary, Phase 1 data show

- enthusiastic attitudes to the "effect" of the Internet on people's lives, but less strong "attachment" to it as a permanent feature of the household
- getting advice was the most highly rated social goal
- around two-thirds of the group were regularly using email
- traditional media use had declined, along with some of the participants' social interactions using phones or in person contact.

It could be argued then that this group was transferring the satisfaction of some social needs to the online environment from interpersonal contexts at this time.

Progression to Phase 2: Quantitative assessments

It was desirable to develop a means of capturing change in Internet behaviours over time to complement the qualitative data. Called the Internet Connectedness Index (ICI) like the original model developed for the Metamorphosis studies of communication technologies and community in the Los Angeles area (Jung, Qiu, & Kim, 2001) the instrument is an overall measure of connectedness based on eight dimensions of Internet activity. The items used to produce this rating included

- user status/history
- attitudes to the Internet and its effect on the respondent's life
- Internet dependency
- goal scope
- task scope
- site scope
- frequency online
- time spent on email.

Social purposes of Internet use are well reflected here: task scope is based on a number of typical Internet activities like email and communication with others such as in chat rooms; goal scope includes three or four social goals of the six offered for rating; and time spent on email is clearly a measurement of the most popular online activity (Horrigan & Rainie, 2002). By means of calculations performed using an Excel spreadsheet[7], the items were collated into a single number for each participant.

[7] The eight dimensions are compressed into a single number ranging from 1 (lowest Internet Connectedness) to 12 (highest Internet Connectedness). The scales for each variable listed above vary, so analysis in Excel standardised them to a 12-point scale by multiplying by a value to create a common factor of 12. The final ICI score is determined by averaging the scores for the items.

For Phase 1, missing data for 3 of the 24 participants means that ICI ratings have been generated for 21 individuals. It was decided on the basis of the qualitative data that an ICI rating of 7 and above designates a high connector, and below 5 a low connector. Table 1 shows six individuals at Phase 1 are high connectors while five are low connectors:

Table 1: ICI ratings at Phase 1

Code	*ICI Phase 1*	*Connectedness*
1	7.66	high
3	6.25	-
4	5.27	-
6	7.41	high
8	5.96	-
9	5.75	-
10	5.62	-
12	6.74	-
13	5.93	-
14	5.68	-
15	7.57	high
16	2.10	low
17	7.50	high
18	4.55	low
19	5.42	-
20	2.05	low
21	3.57	low
22	4.22	low
24	4.71	low
25	8.99	high
26	7.87	High

Comparative analysis is possible at this time for nine of the original respondents who were re-surveyed using the same questions several months later. Phase 1 data for these participants is reproduced in Table 2 along with Phase 2 data to provide comparison. Three of the nine – Participants 3, 9 and 13 - show an increased connectedness; Participant 25 remains almost unchanged, and Participants 1, 4, 6, 8, and 24 show a decrease.

Table 2: *ICI ratings comparing Phase 1 and Phase 2 for nine participants*

Code	*ICI Phase 1*	*connectedness*	*ICI Phase 2*	*connectedness*
1	7.66	high	6.69	*Decreased*
3	6.25		7.30	increased
4	5.27		3.67	*decreased*
6	7.41	high	6.0	*decreased*
8	5.96		5.66	*decreased*
9	5.75		6.38	increased
13	5.93		7.68	increased
24	4.71	low	4.18	*decreased*
25	8.99	high	8.96	*Almost unchanged*

On this basis it could be argued that overall there has been a slight drop-off in connectedness after a year of Internet use in this group. Yet, while they are seductive,

numerical data from a small study are inconclusive. They merely draw attention to broad groupings in the sample: some people are enthusiastic Internet users initially and remain so; others have little interest and do not acquire it; still others have been keen but their connectivity has faded. Qualitative data play a crucial role in helping to explain these findings, especially in view of the high hopes held for schemes like CIH in their assumed capacity to transform communities.

Beyond the numbers are stories

Interviews provide glimpses into the domestic circumstances of the participants, and reveal great variety in the ways in which the technology is used. Six of them[8] are selected as examples below to illustrate the influence of context in shaping an individual's use of the technology, as well as the overall fragility – and instability - of access to ICTs among the group.

P25: Escaping from real world stresses

P25 is more or less confined to the home as sole caregiver for her elderly, frail father. She continues to have the highest ICI rating in the group at Phase 2; anecdotal evidence such as comments at parents' meetings saying "She's the Internet Queen!" and her own commentary as an ardent Internet user support this. The hypothesis that such individuals become rapidly engaged in the social aspects of Internet use because they are 'generally better communicators across all media, and with richer social lives in every sphere' (Wellman & Haythornthwaite, 2002) has some credibility in this case, since she is a highly communicative person and gives every appearance of being the centre of her extended family networks. However her Internet behaviours and attitudes have changed since Phase 1.

At Phase 2, P25 was going online frequently at the library as well as at home, but her reasons for being so connected had changed: for example, her use of email – though still a daily activity – had declined both in the amount of time spent and the number of emails sent in an average day. Emailing friends had dropped from 'every day' to 'very little', but she had begun to email people she had come to know through chat rooms. By her own admission she had become a lurker, 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.

P13: Suddenly solo and highly connected

For P13, a sole parent of three children, a considerable increase in Internet connectedness by Phase 2 was symptomatic of a very much altered domestic situation. Her husband no

[8] Of the original 24 participants in Phase 1, a small number never did become Internet users for various reasons, and therefore missing data reduces the sample to 21. A minimum of seven of these have since been 'lost' to the research because they have moved away from the area or for similar reasons such as family break-ups. At the time of writing, eleven of the remaining households had been visited for a second time.

longer lived with her and the children. She was relieved that as a result she had retained the use of the school's CIH computer, and would now miss the Internet more. Internet goals had become more important; she was using email, surfing and doing research more, doing banking and bill paying less in person and more online, and reading online news. She logged on once a day or more, compared to 3-5 times per week before. While a year previously she emailed her friends and family more, her preference now was to telephone them. This participant's "real world" had propelled her into discovering the practical advantages the Internet could afford, and yet at the same time she still valued the more personal modes of contact.

P9: No longer online, an Internet transient

P9, now a non-user, had returned the computer to the school not long before the second interview because the son who entitled the family to receive the CIH computer was now no longer living with her. An older son has also left home and the only remaining dependent was a pre-schooler. By Phase 2 her goal scope had declined significantly. She did however estimate a rise in task scope, as well as greater frequency of time online and more email hours. She could not afford to buy a computer or fund an Internet connection. During the months she was using it, however, evidently her use increased, as shown by the rise in ICI, and she may not remain Internet poor in the long term. Her story illustrates Merkel's 'stop-start ... technology use' (Merkel, 2003, p. 26) apparently dictated by changed family circumstances and precarious finances.

P6: Critical health needs in the family

This respondent's youngest child had, during the research, developed a rare medical condition. Although the Internet has given the mother access she would not otherwise have had to information about the illness, and to support from a few other families around the world who were also experiencing it, emergencies and uncertainty often interrupted family routines. While P6 said she would miss the Internet more now, social reasons (making friends) is less important as an Internet goal, surfing occurs only 'sometimes' rather than every day, and playing and communicating in chat rooms have decreased. She spends less time reading the news online, watching television and emailing: the hours spent on this have dropped markedly to fewer than 5 hours per week, as has the regularity of emailing friends. Much more frequent use is made of online banking. All of these changes make sense in regard to the family's situation, and reflect the fact that this mother's daily priority is to take care of her unwell child's needs.

P4: Busy community volunteer

P4 and his wife were highly civically engaged; in particular, P4 had devoted thousands of volunteer hours to Habitat for Humanity and is on the school's Board of Trustees. The couple are also active in the local community group, while P4's wife works at the school. P4 shows the largest drop in ICI rating from Phase 1 to Phase 2 (refer Table 2). Most of his Internet activities have declined in frequency, and his goal scope has diminished: more importance is now attached to fewer, less social Internet goals. However he would

now miss the Internet 'quite a lot' compared with 'a little' a year previously, and they have purchased their own computer. P4's estimation of its importance in the family is likely to be coloured by the fact that the couple's three children appear to make extensive use of it; and as he is a highly committed community volunteer, a decline in Internet connectedness is unsurprising.

P24: Wary family patriarch

This participant, a Cook Island man in his fifties, demonstrated strong family values and a deep attachment to Church and Cook Island community activities. He tended to be dismissive of technology, in a firm but good-humoured way, and continued to rate as a low connector. He had bought his own computer, but although he wanted to have it available – recognising its potential as a tool for information retrieval – his use was conservative and controlled. For example, he would not permit his young grandchildren to use the Internet. He was however a daily user of email - 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 firm in his view that such talk made him think of robots, not humans. He had an entirely pragmatic view of the Internet – it has a place, but it is to be kept in its place. P24 is not convinced by wired world rhetoric.

Discussion

Providing Internet access in hopes of generating positive social spin-off within a local community is clearly a highly complex matter. At the most basic level, if a correlation is to exist between access to the Internet at home and greater community capacity, those provided with Internet access would need to show they are using and even increasing their use of the Internet, as measured in this study by the ICI. Even though derived by a reductive technique, these indices are useful for describing change over time; yet if we seek trends over the year in this study (see Table 2), little consistency nor pattern is evident. A small minority of participants became more connected; the majority, less connected. If there is an overall pattern, then it is in the direction of declining connectivity. When we look to the domestic contexts, we find a wide variety of factors that create volatility or fragility in the tenuous business of keeping poor families online.

Social connectivity could be regarded as an important goal for families opting into CIH, and indeed as already mentioned, a reinforcement of local community ties is sought as part of the CIH philosophy (Computers in Homes, 2001). We could reasonably expect that new users in the present study would opt into increased connectivity to build their various social networks, on the basis of recent literature showing email, in particular, being enthusiastically embraced (Boneva, Kraut, & Frohlich, 2001; Fox, Quitney-Anderson, & Rainie, 2005; Horrigan & Rainie, 2002; Kraut & Mukhopadhyay, 1999; Quan Haase, Wellman, Witte, & Hampton, 2002). The Pew Internet and American Life Project has found email is by far the most popular use of the Internet[9] (Horrigan &

[9] This social use of the Internet continues to increase: the International Date Corporation measure of international email volume shows strong growth, predicted to reach 35 billion messages per day in 2005, up from 10 billion per day in 2000 (Shapiro, 2005).

Rainie, 2002), just as 'social communication remains the dominant use of the residential telephone' (Kraut & Mukhopadhyay, 1999, p3). If people 'live in a community in virtue of the things which they have in common …[and] communication is the way in which they come to possess things in common' (Dimmick et al, 1994, cited in Hindman, 1998, p.27), then we might suppose that more communication both creates and expresses stronger community. However, if there is in fact increased message-making in the CIH setting, does it help develop stronger community in any way?

At Phase 1, participants showed a moderate level of enthusiasm for email. By Phase 2, of the nine subjects for whom comparative data is available, three show a *decline* in email hours per week and emailing of friends; one person prefers to email people she has met in chat rooms rather than emailing her friends. Three of the nine have increased their email hours although in one case the increase is very small and she expressed a preference for speaking to friends on the phone; for two participants there is little or no change. There is some evidence for one or two that they feel more connected to the CIH group, and perhaps to the school, but overall it is difficult to see here any significant spin-off from Internet connectivity for community-building. Furthermore, 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 emailing (Horrigan & Rainie, 2002).

Where high Internet connectivity has been maintained or has increased in the CIH sample, there are paradoxes, such as P25 who is highly connected, but her connectivity to online social networks is less about participation than observing from the sidelines, and her social world has apparently shrunk despite the access she has to an online community. In addition, she could already be characterised as a highly sociable person, and so we might question what real benefit has accrued in her situation as a result of Internet use. Noteworthy too is her response to one of four survey questions intended to measure contentment[10], which 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 (ie 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).

P25's second interview speaks of feeling isolated, retreating into the Internet as a complete escape from the stresses of her real world. Thus more time online in purportedly social activities has not been accompanied by beneficial changes in this woman's personal social circumstances. In a hydraulic or displacement hypothesis (Wellman & Haythornthwaite, 2002) it is argued time spent online can only subtract from time spent on other activities, such as face to face interactions with family and friends; furthermore it is time spent alone. P25, 'escaping from real world stresses' in caring for

[10] Derived from a study of the relationship between Internet use and social capital (Shah, Kwak, & Holbert, 2001).

her ill father by visiting online chat rooms, certainly fits this mould. Her social connectivity is virtual.

A significant challenge for implementation of CIH is the fact that strengthening of local community is thought to be linked to high speed broadband, which 'transforms and enhances neighbouring' as found in the Netville studies of a wired suburb in Canada (Hampton & Wellman, 2003). Thus faster, 'always on' Internet may be required for any impact on local community to be felt. This is partly because with less reliable dial-up networking, real motivation is required even if one wants to simply stay in touch via email, let alone use more bandwidth-hungry applications such as downloading pictures. Frustrations with relatively low-quality donated – but recycled - CIH computers has been clear throughout this research, from parent interviews, parents meetings, and a school principal.

While the six cases summarised are neither fully representative of the research sample (N=21), nor of their school communities, they make it plain that schools face an uphill struggle in somehow integrating home Internet access for struggling families into a broader strategy of building school community capacity. An important element of CIH strategy is to bolster the relationship between school and family by encouraging email contact and attendance at parents' meetings, yet neither of these is well supported. After the initial rush of excitement with email, people tend to spend less time on it and are more selective about how it is used, due to the demands of complex domestic circumstances as much as fading interest. In any event, the chances of Internet access changing a socially disconnected family, already less well integrated into the school community than others, into a connected one, appear rather small. Such a hope must be tempered by an acknowledgement that low-income new users are likely to be transient in two ways.

First, they tend to be Internet transients and potentially Internet poor in the long term. This may be because of problems getting them connected, or they need hands-on support, or are unwilling to admit their computer or Internet connection does not work and they need help, or they may not be able to afford to continue. Therefore social objectives such as digital and information literacy and self-sufficiency are entirely dependent on ensuring that people are strongly supported so that they do stay online. Secondly, Internet transience is linked to domestic transience, where family and employment situations are fluid, household members come and go and the household may disintegrate or move to another location. Of the original sample of 24 participants from 22 households involved in Phase 1 of this study, up to ten were unavailable for Phase 2 because they had left the area, families had broken up, the computer had been returned to the school, the Internet connection had never been established, or phone numbers no longer connected. Under these circumstances, it is difficult for schools to find the means to bolster levels of family interaction with technology. In any case, one school principal made it very plain that her brief was not to rescue entire families, nor play social worker to the whole community. Giving recycled computers to some seemed to her to be sending very mixed messages about what some families deserved, when top-of the-range hardware had been installed in her brand new school, including four wireless 'airports'.

Conclusions

Without support, low income 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' (Digital Strategy: A Draft New Zealand Digital Strategy for Consultation, 2004, p.5) seems a deeply challenging objective. The digital divide metaphor encourages responses such as that placing computers where there are none is a panacea. This is not only excessively simplistic, it also diverts attention to a fruitless dichotomous debate. 'Society is dead, we have retreated into the iWorld' (Sullivan, 2005) claim some, while Anthony Giddens argued in a recent interview 'a kind of invention if intimacy goes along with the changes…social relations [do not] become more distanced… people re-invent new connections' (Rantanen, 2005, p.69). While asking questions about the actual gains to be made by focusing on technological solutions to social marginalisation might characterise one as a bit of a King or Queen Canute in the face of the digital tide, at least we should be considering the ebb and flow and examining what debris is left on the shore.

Two principal actants (Couldry, 2004) in the digital divide context are the individual and the hardware. However research on individuals and their hardware such as the present study show the need to broaden the scope, to encompass other actants like CIH facilitators, school personnel including IT support staff, and networks of household members including those who come and go. Considering that this study involves, often, large households including grandparents and other extended family members and friends, networks of interactions with the technology are complex and may pose great difficulties for any one family member. Therefore even illness, economic and employment circumstance, and anxiety about Internet use project additional dynamics into the 'socio-technical system' (Silverstone, 1994, in Couldry, 2004, p.2).

Moreover, if persistent Internet poverty is to be successfully addressed so that it does not become entrenched among the already marginalised, then those factors that seem likely to predispose certain people to dropping out of the online population need to be recognised (Anderson, 2004), along with those that generally characterise individuals who have never had access to the Internet at home before, such as education and income. In NZ we seem to be recognising and targeting the latter through schemes such as CIH, but not the former. Internet access for all may be desirable for many worthy reasons, but installation of ICT equipment at home for low income families is only one part of a complex interplay between household members, technology, school, other parents, and social relationships peripheral to the school. Furthermore, simplistic reading of outcomes should be avoided, no matter how tempting it is to see evidence of transformative powers for the Internet. Did person *x* really get a job because of it?

Further studies are needed to establish in what ways an understanding of elements and entities within and around household social networks can be captured to create enduringly effective community building using ICTs as a vehicle. If communities are to be strengthened by such means, then policy and practice needs to reflect a realistic view

of the ways in which people's initial enthusiasm can wane and their interest and motivation can be lost to the pull of other real world concerns.

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