A Case Study of Technology Adoption in a Remote Australian Aboriginal Community

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Abstact: Aboriginal Australians have often been characterized as low users of modern Information and Communication Technology (ICT). This perception has arisen because of poor rates of adoption of fixed-line phones, computers and the Internet. In this study, we examine the various technologies available in a remote Aboriginal community in Cape York. Our findings demonstrate that Aboriginal people are highly selective, leapfrogging over some standard ICT to adopt 3G mobile phones and music technology such as MP3 players. Given that these are the technologies of choice, it is appropriate for governments to support their use by broadening mobile phone networks, improving supporting infrastructure and providing better technical support in the remote areas where many Aboriginal people live. In addition, these technologies could provide the platform on which to build applications to improve health, education and other services to their communities.

Introduction

Despite considerable investment in Information and Communication Technology (ICT) in Indigenous communities in Australia over recent years, there is still a poor understanding of what technology Indigenous people want and how to support them in using and maintaining it. For instance, one of the authors has been involved in a number of projects where the use of ICT discontinued abruptly once the term of the project came to an end, despite careful selection of technologies according to common notions of what should be culturally appropriate for the Indigenous community concerned or ideas of what might fulfill particular community needs. Projects where new technologies and skills were not used on an ongoing basis, or used only in a limited way, have included making multimedia slide shows; video production; various educational software programs; the use of bulletin boards; and hardware training to enable Indigenous office staff to liaise more effectively with technicians located at a distance. On the other hand, some technologies were taken up with enthusiasm, such as Internet banking where the large cost savings on transactions and added convenience provided a strong incentive in remote communities with no bank (Brady 2007).

The Australian Government, too, has been searching for ways of supporting Indigenous people in bridging the digital divide and gaining better access to ICT, but often with limited success due to its assumption primarily of a top-down model which focuses on improving infrastructure (Dyson 2006). To give one example, the government subsidy for broadband Internet delivery via satellite had poor uptake and was criticized for being unresponsive to Indigenous needs (PYMedia 2004). More recently services such as “Country Calling” have been designed to take into account socio-cultural factors to make fixed-line telephone services to remote Indigenous households more attractive (Morsillo 2007). However, the success of such initiatives is yet to be properly evaluated.

This paper seeks to redress this gap by presenting the results of a study of technology adoption in Wujal Wujal, an Aboriginal community located in Cape York, a remote area of Australia (Fig. 1). Wujal Wujal is normally accessible by 4-wheel-drive vehicle and 180km away from the nearest city. The population was 305 in 2006 (ABS 2006a). The community has no real industry and few permanent jobs. However, the town is well serviced by the

local council and government, and there are three small shops in or near the town. In many ways it is typical of other remote Aboriginal communities and, as such, findings from this study would be applicable to other areas, with due allowance made for local factors.

Figure 1: Location of the Aboriginal Case-Study Community in Cape York

Our paper commences with an overview of the literature on ICT adoption by Indigenous Australians. This is followed by a description of our research methods. Then the findings of our study are presented focusing on ICT deployment and use, as well as an examination of the issues that remain to be solved if the people are to gain the full benefit of the technology.

Background to Aboriginal ICT Adoption in Australia

The area of Aboriginal Australians and ICT still remains under-researched, in part because of the lack of Aboriginal professionals qualified in ICT (Robertson, Dyson, Norman & Buckley 2002) who would possess the knowledge to make informed comment. However, studies have been growing in recent years as the potential of ICT for Aboriginal people has been recognized and more researchers learn to work with Aboriginal communities to provide technologies that suit the latter's needs.

Originally, a number of studies focused on the issue of technological determinism and whether, by introducing tools which were the product of Western culture, and hence embodying the standards of the society that produced them, unwanted values might be loaded onto Aboriginal users in a modern form of cultural imperialism (McConaghy 2000). Aboriginal people themselves, in various parts of the world, have voiced disquiet over the Internet as a tool which distances information about Indigenous people from the people represented, and furthers the commodification and control over their representation (Iseke-Barnes & Danard 2007). Copyright has been another issue of particular anxiety, given the difficulty of protecting intellectual property on the Web and a history of abuse of Aboriginal intellectual property rights in the past (Radoll 2004).

Despite these concerns, there are many instances of highly positive responses by Aboriginal people to ICT in Australia, particularly when culturally appropriate technology has been made available. Two examples include the Ara Irititja database, developed for the Pitjantjatjara people to access photographs, recordings and documents; and the HITnet touchscreen kiosks, placed in clinics throughout Cape York to allow patients to view and interact with Indigenous health information (Hughes & Dallwitz 2007, McKay, Kõlves, Klieve & De Leo 2009). The largest collection of research on the topic is contained in *Information technology and Indigenous people* (Dyson, Hendriks & Grant 2007), which includes case studies on many successful applications. These range from software for Aboriginal language revitalization; cultural maintenance systems; the use of ICT in health, education, land rights and banking; genealogy databases; geographic information systems; and the design of improved communication technologies for remote communities. In addition, in recent times, researchers have begun to notice that mobile technologies are also extremely appealing. The first Australian study of mobile phone use by Aboriginal people was conducted by researchers at Alice Springs prior to the widespread adoption of 3G (third generation) phones (Tangentyere Council & Central Land Council 2007). This study found a far higher rate of ownership for Aboriginal people than home phones or computers. A noteworthy conclusion of this study was that mobile phones must now be

considered a *necessity*, not a luxury, since they provide telecommunications for people with limited access to land lines or public telephones. A second study focused on mobile phone communication in the Torres Strait and proposed that mobiles might be useful in reviving endangered Australian languages (Brady, Dyson & Asela 2008), while another noted the widespread uptake of the music and multimedia features of 3G phones once these had been introduced into many communities (Dyson & Brady 2009). Sinanan (2008) observed the open use of mobile phones in a Victorian Aboriginal community and concluded that they had a special place in reaffirming social bonds, while several studies have found mobile devices useful in education (AED 2007, Wallace 2009). These ICT studies stress the ability of technology to fulfil basic human needs, such as the need for communication, but also note the importance of culturally situated technology design which fits with Aboriginal traditions and practices.

To explain ICT adoption patterns by Aboriginal people, Dyson (2003) proposed that attributes inherent in the technology, such as its flexibility, interactivity, its non-judgemental and non-hierarchical nature, and its use of graphics might mitigate any potentially negative effects and allow Aboriginal Australians to achieve their own goals while avoiding Western enculturation. To these we can add the ability of phones, MP3 and CD players, etc., to fit with Indigenous cultural strengths in orality (Brady, Dyson & Asela 2008). Dyson, Hendriks and Grant (2007) noted the importance of the convergence of telecommunications, broadcasting and computer technology, as well as the enormous potential offered by the integration of image, sound, video and animation in multimedia applications for people whose culture is based on ceremony, dance, music, art and oral language traditions. However, Brady, Dyson and Asela (2008) noted that ICT is not always well designed for Indigenous people and drew attention to the huge impact of *motivation* in driving them to overcome profound design barriers, such as their preparedness to use mobile phone keypads despite low literacy levels and poor vision.

There still remain limitations on ICT adoption and a range of contributing factors have been identified. Extrinsic factors include chiefly the difficulty in accessing the technology due to cost, geographic isolation, and poor telecommunications and supporting infrastructure in remote areas. The latter may include the lack of a reliable electricity supply and delays in repairing equipment when technicians are brought in from outside (DCITA 2002, Dyson 2006). Human factors have also been highlighted and these include socio-economic circumstances (low incomes, problems with debt management, low formal educational attainment), cultural issues (a mother tongue other than English, low literacy levels, expectations of shared resources), low computer literacy and a lack of awareness of what ICT might do for Aboriginal people (Dyson 2006). Often issues interact in complex ways. For example, Barlow and de Lacey (1998) noted early on that poor schooling, having no computer at home and no social network of technologically competent friends all contributed to low computer literacy. Though improving infrastructure has been the focus of many Government initiatives, it is generally acknowledged nowadays that human factors are probably more important in contributing to low adoption rates of certain ICT – such as fixed-line phones, computers and the Internet – and also more difficult to resolve (DCITA 2002).

Research Methods

The researchers employed an ethnographic approach in which background research and on-ground interviews and observations combined to produce a rich understanding of technology implementation, use and issues in the Aboriginal community. Firstly, in 2005 a preliminary visit was made to the community and the then CEO and other managers were interviewed. This provided an overview of the issues involved. The authors then researched the literature and examined the statistical view of ICT in the community based on Australian Bureau of Statistics data. Following this, a study of ICT was conducted over three visits from 2008 to 2009 during which qualitative research methods were employed including 7 interviews with mainly non-Aboriginal managers, 3 interviews with local Aboriginal shire councillors, and 17 interviews with Aboriginal residents. These interviews focused on mobile technology ownership and use. This technology was singled out as one of the few ICT that private individuals in the community had adopted with enthusiasm. Observations of ICT deployment and use were made by the researchers at this time and these were tested against the perceptions of local residents.

ICT Deployment and Use

Fixed-Line Phones

A fixed-line telephone service was introduced into the area in 1988. In the two-year period 2006/2007 there were 12 private dwellings and 10 organizations or businesses in the community listed as having a fixed-line phone

(Cook Shire Council 2006/2007). These connections covered 84 occupied dwellings in Wujal Wujal (ABS 2006b), which shows that only 14% of private dwellings had a home phone. By 2008/2009 private listings had dropped by 50% to 6, while subscriptions for organizations remained the same (Cook Shire Council 2008/2009). The reasons for this drop are unknown but it coincides with the introduction of a 3G mobile phone network.

This low rate of fixed-line phone subscriptions (7%) contrasts with the 91% of Australian households overall who have a home phone (ACMA 2008b). A range of factors have been identified in previous studies as contributing to low subscription rates by Aboriginal Australians, including prohibitive connection costs in remote areas and maintenance difficulties from telephone technicians having to travel long distances (ACMA 2008b). Morsillo (2007) interprets the fixed-line phone service in Australia as a culturally constructed artefact which presumes a certain type of user at odds with the average Aboriginal person. He notes the service's assumption that the user has a fixed address, has a line already installed or lives not far from the nearest connection point, earns the income necessary to support fixed monthly access charges, can take responsibility for all usage, and resides in a household whose membership is fairly stable. The misalignment between this ideal and the actuality for Aboriginal users results in a poor service and unsupportable telephone bills. Where extended families living in the one house is the norm and cultural obligations make it difficult for the subscriber to refuse use of the phone to family and friends, high numbers of calls often result for which the subscriber is unable to pay, leading eventually to disconnection of the service (DCITA 2002).

A major problem with fixed-line phones pinpointed in our study is the amount of time they are off the air. The area is subject to frequent power and communications black- and brownouts, particularly in the wet season. A tree falling on a line, rats chewing through the cable to the exchange, accidental digging up of the cable or a power brownout all cause disruptions to the service every couple of months. In 2007 there was an occasion when the phones were off for nearly a week when road works cut the line.

Public Phones

The town has a public pay phone which was working at the time of the research. Moving the phone to card operation seems to have reduced some of the problems reported in the literature where coin-operated phones often become unoperational due to jamming of coins, vandalism or other factors (DCITA 2002). The phone booth is well designed for shared calls, roomy enough to fit several people at the one time, and is conveniently located near the store where phone cards are for sale. Users can make a call, send a text message or receive calls. For example, if a person has insufficient money to ring, they can text off the phone booth's number for $0.20, asking the receiver to telephone back. The public phone is essential given the low rate of home phone subscriptions and the much higher cost of mobile phone calls: $0.50 for an untimed local call from the public phone booth compared to, e.g., $2.64 for a three-minute call from a pre-paid mobile. Public phones have consistently been identified as of great importance in Aboriginal communities, particularly for emergency situations (RTIRC 2008). In Wujal Wujal the public telephone is useful for phone banking to supplement the services of the local banking agency in the post office and the ATM and EFTPOS facilities at the store. Our study did not attempt to measure the rate of use of the public phone, but another study showed that usage was very high amongst Aboriginal people (79% of study participants), with low income earners more likely to use it (Tangentyere Council & Central Land Council 2007).

Computers and the Internet

There are no statistics available for private computer ownership but it was reported to be very low by our interviewees. The former CEO estimated that fewer than 14% of households owned a computer. One reason for this is the difficulty in using a computer without distractions since there would be no dedicated computer room in the house due to overcrowding. Connectivity to the Internet is also low, 9.5% of dwellings in Wujal Wujal compared to 63% of Australian dwellings nationally (ABS 2006a, ABS 2006b).

The main opportunity that residents have to use computers is through school or work. All children have computer access and training while attending the local primary school and while boarding away from Wujal Wujal during their high school years. Those minority of adults who are employed in offices at the council, clinic or other services can use their work computers and the Internet as well as having free use of telephones. Workplaces in remote areas have been very important in terms of residents' access and experience of ICT. Offices are ICT rich and generally have new technology well before people in the wider community. People learn computer skills at work which may then be passed on to other members of the community, or they may share the benefits of their access to

workplace ICT by doing computer tasks or making phone calls for others (Brady 2007). Our study confirmed that a staff member at the council office performed Internet banking for people in Wujal Wujal, for example, allowing parents to transfer money to their children away at boarding school. However, there are also disadvantages. For example, there is no privacy with respect to either phone calls made in the office or tasks undertaken for a member of the community by an office worker.

Given the low private ownership of computer technology and the large proportion of the population not working in one of the offices, the availability of public access computers assumes a greater importance than it might in mainstream Australian society. However, provision of public computers in Wujal Wujal is very substandard. Like many other Cape York communities, Wujal Wujal is linked to the Cape York Digital Network (CYDN) (Latukefu 2007), which provides a community technology centre in a council-owned building at a monthly charge to council. The centre has public computers linked to the Internet, but at the time of research this was not staffed and so not used by residents, apart from two mornings a week when an employment agency opens it for its clients. According to interviewees, the centre had been staffed in the past but this had ceased because no training or support was given to them by CYDN. Likewise the Indigenous Knowledge Centre, or library, which in many communities is a major source of computer access, had no computers for public use at the time of our research. Its public access computer was out of order and had been so for some time.

An interesting point was raised by some managers that public access computers need to be set up in such a way so as to give privacy to adult users, as those with poor ICT skills will be embarrassed to use computers in front of children. Certainly, in Lockhart River, another Cape York Aboriginal community visited by one of the authors, the only people using the row of computers in the Indigenous Knowledge Centre were children. A separate public access community in an office was where adult users went.

Videoconferencing

Videoconferencing technology has been in place in the community for some years. It was a technology initially promoted heavily by government as a way of linking people remotely, for example, allowing families remaining in community to see and talk to relatives serving gaol sentences (DCITA 2002). In Wujal Wujal, the equipment set up in the CYDN was rarely used. Its introduction was based on a flawed business model, with expectations that its operating costs would be funded by users. There was a problem with people not being prepared to pay for a technology with which they were not familiar, particularly given the difficulty of estimating the cost of a session before it started. In addition, the need to book the service two days ahead, since there are no technicians in the community, reduced its value in emergencies. Since then videoconferencing equipment owned and funded by the clinic has been used for the purpose of virtual prison ‘visits’, apparently with success.

Radio and Television

Wujal Wujal has a community radio broadcasting service (BRACCS) in operation, similar to that in many other Aboriginal communities elsewhere. The radio station provides employment to a community broadcaster and local content. The main concern with the radio service is that it goes down about every three or four weeks through power failures.

In addition, the community has public television access. As well as the usual channels, National Indigenous TV (NITV) shows Indigenous programs, which have included content from Aboriginal people in Cape York. However, again, power surges break the TV decoders at the council so that the service is interrupted. Four times a year a communications expert from outside the region comes to repair the television decoders and ICT, but it is very expensive. Like many remote communities they do not have a reliable power supply.

Music Technology

Apart from MP3 players, the researchers did not investigate the ownership of digital music technology. However, a CD player was observed in constant use in the aged care facility. Also, like most other communities, there is a local band which has adopted electronic music technology.

MP3 players are available for sale although it was reported that sales had decreased in recent times, possibly because of competition from 3G mobile phones, which can also play music. For example, one man stated

that he used his mobile phone for music and so did not need an MP3 player any more. Thirty-nine percent of Aboriginal respondents had an MP3 player or iPod. Two advantages of the technology include being able to play music while driving over roads too rough for CD players, and being able to listen to one's own personal choice of music through the earphones. For example, one parent stated that her taste in music was not the same as her children's: "if the kids don't like it a lot they'll tell you".

One high-end user of iPod technology reported downloading movies as well as new music every month for use on his iPod and was observed helping older people. He appeared to be a facilitator for others who were not sure how to access downloads or copy CDs. This increasing exploitation of work computers to download multimedia content was of concern to a number of managers at Wujal Wujal. This has led to two major issues: firstly, the cost to the place of employment for data downloads, and secondly the inappropriate use of work hours for private purposes. One manager spent time blocking sites to music, movies and games to prevent this happening. However, given the lack of public access computers in Wujal Wujal there is really no place for residents to download content. A policy on who pays for the downloads is also needed.

Mobile Phones

A mobile service has been available in the township for several years, with a 3G network taking over from the previous, but not widely used, CDMA (Code Division Multiple Access) service in January 2008 (ACMA 2008a). The new network makes possible phones which are no longer merely communication devices but almost minicomputers with access to many information and entertainment functions as well. Phones, all of the pre-paid type, and phone recharges are available for purchase at the local store.

Interviewees reported that the mobile service is not as susceptible to disruptions as fixed-line phones. When the fixed-line phones go down and communication is essential, e.g., to contact the clinic, people rely on their mobile phones. However, it was noted that during the 2008 wet season the mobile phone service also failed and one parent reported that they had had to request the use of the police satellite phone in order to cancel travel arrangements for her children to return to boarding school as the roads were closed.

Our research showed that 55% of Aboriginal interviewees own at least one mobile phone. Some people share a phone, for example, one couple use a phone between them; 1 person has two phones; and 5 people are on their second phone (3 of these had had a CDMA phone before, while 2 had "drowned" their phones while fishing). Most people carry their phones with them all the time and have them turned on. It is interesting that mobile phone ownership is about the same as that found by two other studies of Aboriginal mobile phone adoption: 56% in Alice Springs and 58% in Lockhart River (Tangentyere Council & Central Land Council 2007, Dyson & Brady 2009). These percentages compare to 71% mobile phone ownership amongst non-Aboriginal residents of Bloomfield River Valley (Brady & Dyson in press). These figures indicate that there is a much higher adoption of mobile phones than fixed-line phones or computer technology. Keeping in contact with family and friends is the main reason given for owning a mobile phone (67% of interviewees), followed by requiring a phone for work (45%), contacting people while travelling (22%) and for emergencies (22%). Of those who do not own a mobile phone, most said they could not receive any signal where they lived (38%), while others stated they had access to other phones (25%) or had no interest in acquiring one (25%).

Mobile phones are used predominantly for communication, with all interviewees reporting that they make phone calls or send text messages or do both. Most people use their phones to communicate with family and friends. One grandmother said, "Ring family, ring hospital, friends. Maybe ring grandchildren. Someone in hospital." One use of mobile phones reported by several parents is keeping in contact with children while away at boarding school. This is important as all high-school age children are required to study away from the area.

Entertainment uses are also common and include listening to music (55% of interviewees), playing games (36%), and watching movies, TV or sports (27%). Not surprisingly, given that the only phones that can be used in the locality are Internet-enabled, uses of the Internet to download music or access movies or TV figure prominently (45%).

In the community there was generally a high level of awareness of the cost of making mobile phone calls. Community members identified a range of strategies to manage these costs, including purchasing prepaid phones, minimizing usage and outgoing calls, sending text messages, using a "pre-paid friends service", and keeping the phone on one's person in order to avoid unauthorized calls by others. Our interviews revealed a high rate of mobile phone ownership but what appears to be an underutilization of basic mobile phone services such as calls. A typical comment from an interviewee was that "I only make calls when I have to." Cost appears to be a major limiting factor to people's use of mobile phones.

Work was a major reason offered by Wujal Wujal respondents for owning a mobile phone. Our results indicate that a small percentage need their mobile for seeking employment, while many others already in employment are using their personal mobile for the benefit of their employer and clients, both inside normal working hours and outside. An example are the shire councillors who choose to be "on-call" to the community they represent. One woman who worked in aged care said, "I need a phone for three clients. … I need a phone for clinic or the police. … I'm worried about my clients." Only managers in Wujal Wujal are provided with mobile phones for work purposes. These results represent a reversal of the previous pattern of ICT provision and skills training whereby the workplace provides computers and trains people how to use them. With mobile technology workers are bringing their personal mobile phones and their skills at using them *to* the workplace. Using personal devices for work is unusual in Australia, although perhaps more common elsewhere (Katz & Aakhus 2002).

ICT Issues

Gaps in ICT Provision

Our research revealed some major deficiencies in the deployment of ICT in the area. Firstly, as stated before, the provision of public access computers is poor. Secondly, though there is good mobile coverage in the town, once residents move away, for example for recreation, they often get no signal. Even people who live in the town may need to contact others who live outside the coverage area.

Lack of Backups

There is also a problem with depending on technology in the absence of backups. For example, sometimes there are difficulties with arranging payment of staff using online banking when the line goes down. Then people incur extra bank charges, or are charged interest when loans are not paid on time. As the former CEO stated, "Who should be responsible for this? It's not the community's fault or the person's fault who hasn't been paid." There should be a system where the bank can be alerted and not impose the charges, or otherwise an alternative technology be made available in case of failure.

Another example is the electricity supply. Currently, a repair team has to come 60km from the nearest regional centre when the power goes down. This represents a 1 to 1½ hour trip, provided the road is not closed by flooding. There is no backup as the generators which once were in operation were removed when the electricity supply was installed.

Poor Co-ordination of ICT Services

Several managers noted the lack of co-ordination in maintaining ICT between the various government sectors. If one service provider needs a computer fixed, they call a computer technician but do not alert any of the other sectors that the technician is coming. The expense of bringing in outside ICT experts from a distance of at least 180km is a problem.

Under-Utilization by Service Providers of Appropriate ICT

A disappointing finding was the poor use that government and service providers are making of mobile technology, considering its relatively high rate of adoption by individuals in the community. Many applications for health (diabetes management), education (mobile learning), State Emergency Services (SMS alerts), work co-ordination, etc., could be implemented if service sectors were more aware of the potential and if coverage in the locality were improved. For example, the usefulness of mobile technology for health services would be particularly limited if coverage over the locality where daily activities are carried out was wanting: a person camping away from home could miss their medication SMS reminder because they were out of range.

What technology will be appropriate needs to be determined by the community, not by government or by outside providers. The former CEO put it this way, "How can culture talk to technology?" Certainly, the oral strengths of the Aboriginal culture and their traditional interest in music seems to be speaking to mobile technology.

ICT Education

This study has demonstrated that there are skills gaps in the community when it comes to ICT. In particular, the poor rates of access to computers and the Internet must mean that computer literacy is lower than in the general Australian community, although it was beyond the scope of the research to investigate this precisely.

With regard to the newer technologies – mobile phones and MP3 players – it appears that most people are "extremely capable" at using them, to quote one of the managers. Where older people sometimes lack the skills needed to use these extremely sophisticated 3G devices, they get the younger members of their family or younger colleagues to help them, repeating a pattern of behaviour reported in Indigenous communities overseas (Portus 2006).

Of more concern are reports that some people have come to grief by inappropriately purchasing mobile phones with monthly plans, incurring bills of up to $4,000, a similar finding to another Cape York community (Dyson & Brady 2009). In other cases, people have avoided this useful tool for fear of getting into financial trouble, having heard the bad news stories. There is, furthermore, the issue that people seem to under-utilize their mobile phones because of the excessive cost of calls. Given these findings, it would be good if a short training course could be developed to provide some assistance to users in choosing phones and managing costs effectively.

A course could also include advice about mobile cyber safety. During interviews, some respondents identified a number of problems already encountered elsewhere with children and mobile phones. These included humbugging, whereby young people adept with mobile phones employ methods to gain credit from family members or change their own battery for a newer one they take from someone else. There were also concerns that mobile phones had been used for bullying and teasing out of school hours. One parent noted a problem with pornography that older children had got from the Internet: "Younger and younger kids were getting it from the older kids. They were Bluetoothing it to one another." Training for children, parents and teachers might be useful here.

Conclusion

This study shows that Aboriginal people are highly selective about which ICT they wish to purchase and use. In the remote community of Wujal Wujal, subscriptions to home phones are extremely low and, apart from a minority of people who work in offices and some employment agency clients, most adults cannot readily access a computer or the Internet. Mobile phones, music technology and television are, in fact, far more popular than any other ICT. In particular, 3G mobile technology provides a real alternative to Aboriginal people wishing to gain access to a powerful tool of communication which further combines many of the functions of computers and multimedia devices. The Northern Territory Government is quoted as stating:

> Mobiles are the product of choice in remote, and particularly, Indigenous communities. Prepaid mobile services resolve issues of customers defaulting on monthly payments and also solve problems associated with Indigenous cultural issues of resource sharing. (RTIRC 2008, p. 75)

In the past, the Australian government and many researchers tended to assume that Aboriginal people would follow a similar pattern of ICT adoption to the mainstream community, beginning firstly with fixed-line telephones, and then acquiring computers and Internet connections, and only later purchasing mobile phones. From this standpoint, the government introduced various schemes to boost home ownership of fixed-line phones and computers with Internet access (DCITA 2002), but without appreciable success. They often ignored socio-cultural issues and focused on income-generating uses and on standard office technologies, a largely unrealistic position given the limited employment opportunities in most Aboriginal communities.

The findings in this study suggest that it would be sensible to follow Aboriginal people's actual ICT preferences, allowing them self-determination in their technology choices. Areas where governments can help lie in improving mobile phone coverage, making electricity supplies more reliable and co-ordinating technical support, particularly in remote regions. There is also an urgent need to begin designing and building systems to service the needs of Aboriginal communities better, and, given the strong adoption of mobile technology, this would seem the obvious platform on which to base culturally appropriate applications for better health, education and other services.

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