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Beyond public access? Reconsidering broadband for remote Indigenous communities

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Abstract

Australia’s Commonwealth Government communications funding programs are promoting the extension of internet services to remote Indigenous communities via shared community facilities. Meanwhile, mainstream delivery programs have largely moved on to focus on individual users.

Indigenous Australians are far less likely to access the internet within the home than non-Indigenous Australians, suggesting that Australia’s ‘digital divide’ is not simply a matter of access, but the context within which access occurs. The Commonwealth’s National Broadband Strategy aims to place broadband communications at the centre of a new digital economy. As the benefits of fast Internet become more tangible, the stakes for those who do not have affordable access also increase. In this paper we set out a case for reconsidering the notions of public and private in terms of internet infrastructure, access and use. Employing policy analysis, available home internet data and a survey of community-based ICT projects, this paper investigates the relationship of broadband policy and other infrastructures, including the politics of housing and ‘township’, as well as economic and social factors.
Introduction

In September 2009, Johnny Namayiwa of Goulburn Island, 300km northeast of Darwin, went to the media to expose what he saw as an unfair economic issue facing Indigenous people living in remote Australia (Razak 2009). Mr Namayiwa was alarmed that residents had been phoned by the telecommunications provider, Telstra, and sold mobile $49 plans but were now facing bills in excess of $1000. A few days later, having investigated the issue, Telstra stated publicly that they were aware of two such cases and that much of the cost for the capped plans related to internet use through the mobile phones. Telstra eventually waived the bills.

The billing problem was reported in the media as a problem of inadequate consultation between the call centre and the local people of Goulburn Island, for whom English is a second or third language. The case, however, raises further issues to do with internet access and media consumption. What access options are available to people living in remote communities? What happens when one site, or means, of access, such as home internet, is unavailable? In this paper we examine the dynamics of public provision and internet use in remote Indigenous communities. The Australian Government’s approach to broadband in remote communities is substantially different to that which is being pursued for the mainstream population. The digital divide has been rolled into a wider agenda of remote service provision, yet housing and communications remain distinctly separate concerns. We first outline the policies behind the dominant community centre approach and present our findings.
from a survey of existing infrastructure and access in the central Australian region. While community access centres have a role to play in training and online service delivery, the obstacles to home or mobile internet are not being addressed in current policy frameworks. We identify areas for concern, including the sustainability of community access centres, the uses that occur (or are encouraged) in public and private domains, as well as the billing problems that can arise as internet access becomes commercially available. The economic and social challenges become clearer when the options for infrastructure and use are considered across public and private domains, revealing important issues for policy and research.

**Uncovering the Digital Divide**

The debate surrounding Australia’s National Broadband Network has centred on infrastructure rollout; whether (for example) fibre-to-the-premises is necessary when mobile broadband services or other technologies might provide an adequate level of service (Tucker 2009, Given 2008). For Indigenous Australians living in remote areas the digital divide can be interpreted as lack of available services in some areas, but also low levels of access in dwellings where internet services are available, whether that be mobile or wired internet access. Housing problems, low income levels and maintenance difficulties have led researchers to conclude community internet access facilities are a more appropriate means of internet access than domestic use (Daly 2005, McCallum and Papandrea 2009).
The public discourse of the ‘digital divide’ arose during the late 1990s as a ‘reality check’ on the predictions and hopes for the Information Society. The central theme was whether individual needs go beyond basic resources (food, shelter) to include communicative resources and what form a ‘share’ of such resources might take. The concept of the digital divide therefore creates a tension between consumer freedoms and social imperatives (Couldry 2007), casting doubt on the assumption that consumer choice alone will create equitable social and economic outcomes in an Information Society.

Digital divide studies initially fell into two categories: the global and the national. At the global level, infrastructure disparities between rich and poor nations threatened to compound economic problems for developing countries. Within the West, the digital divide was linked to social exclusion. In the United Kingdom, for instance, a new progressivism that focused on community partnerships and personal responsibility brought ICT programs into a broader agenda of building human capital. Communications technology became ‘the enabling media of the new economy’ and its agents knowledge workers – ‘wired workers and others whose work does not directly produce material goods’ (Giddens 1994, p. 69). The UK’s digital divide was tackled at the community and family level, with the construction of ICT centres as well as subsidies for purchases and training for computers in low income households.

Although some saw the divide concept as a condescending and marginalising division
between civilised tool-users and the uncivilised nonusers (Jenkins 2006), the
dominant critique was that the discourse overemphasised the physical presence of
computers as a determining factor in the meaningful use of ICTs. This was partly a
reaction to the influential United States Department of Commerce studies known as
the ‘Falling through the Net’ series. These exhaustive statistical studies were based on
a tradition of work on telephone penetration developed by the National
Telecommunications and Information Administration, and the emphasis on hardware
and network reach was carried over to the analysis of the social distribution of the
Internet. The NTIA positioned the digital divide as physical access to computers by
measuring the number of households and individuals with a computer and internet
connection, and in 2002 declared the divide was largely overcome – ‘we are truly a
nation online’ – with the internet being used at work, schools, libraries as well as at
home by over half of the American population and rising by 2 million new users a
month. A wave of scholarly attention emerged, refuting simplistic notions of ‘access’.
The ‘either you have access to ICT or you do not, you are either connected or you are
not’ approach, it was argued, assumed the divide was easy to close, or bridge, with
enough resources and political will (Selwyn 2004, p. 345).

Access began to be discussed as hierarchical rather than dichotomous (Warschauer
2003; Di Maggio et al. 2001; van Dijk 2005) and social access to computers was
investigated as something different to physical access. Skills, confidence, language
and practice were revealed to be complicating factors when it came to the ‘digital
divide’. The debate thus refocused on the social dimensions of usage, ‘a more
elaborate and realistic understanding of inequalities in the information age’ (Selwyn
2004, p. 346). The turn towards the social aspects of use caused the theory to experience a second crisis. If social inequalities are behind the digital divide, some theorists argued, the issue can only be addressed by tackling those causes – effectively rendering the concept redundant, or at least unexceptional as a singular policy concern. While some abandoned the term altogether (Warschauer 2003, Norris 2001), other studies have supported the political expediency of the digital divide metaphor. As Couldry has argued, ‘How else to interrupt the rhetoric of inevitability surrounding terms such as “Information Society”’? Abandoning the ‘digital divide’ might result in the issue of information needs being discarded as ‘just another subtle consequence of social exclusion’ (2007, p. 389).

Since the 1990s, many studies have attempted to look beyond physical provision of computers and towards engagement with technologies as well as short and longer term outcomes of this use. Development communications studies, which is predominantly focused on the Third World has employed Amartya Sen’s capabilities framework, whereby ‘divides’ involve human goods and capacities for action. This field focuses on people’s ability to make use of the options before them rather than simply the presence or absence of resources (Garnham 1999). Although such work would be valuable in the context of remote Indigenous communities, long term, in-depth studies of use do not exist (with the possible exception of ethnographic studies of youth media, for instance Kral 2008).
Our own research into broadband in remote Australia came about through a convergence of two distinct research programs. The Centre for Appropriate Technology in Alice Springs (CAT) was directly involved in government community ICT initiatives, including the development and implementation of an alternative community phone project (known as the ‘CAT phone’, or ‘NED phone’, due to its likeness to Ned Kelly’s armour, see Crouch 2009). Swinburne’s Institute for Social Research (ISR) has been examining the implications of digital broadcasting and broadband on the existing remote Indigenous broadcasting system. The two research groups identified areas of mutual inquiry, including existing broadband infrastructure, access and local content distribution. We then undertook a survey of community media centres, examined ABS statistics and studied coverage maps in the central Australian region in order to gauge existing levels of access and home versus community centre access. Our primary aim was to ascertain broadband needs in relation to current government policy initiatives and to lay the groundwork for further research into the social uses of broadband in remote Australia. As we undertook this preliminary research we realised that residential access is extremely low, yet government policy is firmly set on community media centre provision, an approach which is dramatically different from that pursued for the mainstream population. The consequences of that policy approach became our immediate interest.

In 2009 we conducted phone interviews with supervisors or council workers in a total of 34 communities and visited 10 of those communities in order to ascertain basic information including; whether centres were in continuous use, the number of hours they were open, how the centres were funded, user charges, internet speeds and download quotas, as well as supervision arrangements. We also asked survey...
respondents to provide anecdotal comment on the level and use of activities that occurred in those sites, partly to confirm earlier studies.

First, however, we set out to ascertain the status of home internet access. Measuring the divide by the number of dwellings with internet access may not reveal much in terms of social use, but it does provide a starting point in identifying disparities. In the Australian context, statistical studies have drawn the digital divide between urban and non-urban areas, as well as according to income, levels of education, gender and ethnicity (Meredyeth et al 2006, p. 27; ABS 2007). Data from the 2006 ABS census shows that the difference between the cities and the bush is significant, with 74% of the population of major cities connected to the internet at home, as opposed to 38% of dwellings in very remote areas. The divide is widest, however, ‘between people living in remote Indigenous communities and other Australians’ (McCallum and Papandrea 2009). Using the same data, only 14% of Indigenous people in the combined remote and very remote subdivisions have access to the internet at home, compared to 63% of the non-Indigenous population in the same areas.

These figures, however, obscure the fact that internet access is immensely variable in remote Australia, in terms of the types of access, bandwidth, reliability and cost. Some areas are well-equipped with ADSL¹, while others have only satellite. What are the causes of this divide? In terms of infrastructure, the underlying factors are easily identified. Physical obstacles, such as distance and harsh environmental conditions, have meant that installation and maintenance costs are high. Small, scattered
populations with high unemployment and little in the way of industry make no economic sense for telecommunications providers in a competitive market.

Identifying and addressing the digital divide becomes even more complicated when social factors are taken into account. Research to date, including substantial reports to government (for instance Farr 2003), has for the most part concluded that community access facilities are a culturally appropriate means of internet access in remote Indigenous communities. Government policy has also supported community internet facilities as opposed to home internet. While such shared facilities have clearly played an important role in establishing some level of information infrastructure, the sustainability of these centres is a cause for concern. They also raise the difficult question as to whether they are a long-term solution to the digital divide, or a next-generation modulation of it.

**Policy background**

In April 2009, Senator Stephen Conroy announced ‘the single largest nation-building infrastructure project in Australian history’ (Conroy 21/04/2009). The National Broadband Network (NBN) is a $43billion project to provide broadband to all Australians. The NBN guarantees 100mbps for 90% of the population, which equates to towns where there are around 1000 or more people, using fibre-to-the-premises (FTTP). For the areas not reached by fibre, the government plans to deploy next-
generation-wireless and satellite to ensure enhanced broadband, at speeds of at least 12mbps.

For people in the cities and regional centres, the NBN will have the capacity to meet a suite of communication needs, including IPTV and IP telephony services. For remote areas, home internet needs to be weighed up against other competing priorities and is complicated by a cluster of governmental pressures and protections, including concerns over pornography, gambling and cultural maintenance. The Universal Service Obligation (section 9 of the Telecommunications Act) exists to ensure that standard telephone services, payphones, prescribed carriage services and digital data services are ‘reasonably accessible to all Australians on an equitable basis, wherever they reside or carry on business’\textsuperscript{ii}. The Australian Broadband Guarantee gives bush internet providers an incentive to invest in rural infrastructure in remoter parts of Australia by offering grants of up to $2,500 to sign residential and small business premises (and Indigenous community councils) to metro-comparable satellite, ADSL and fixed wireless broadband services. A metro-comparable broadband service is defined as any service that offers a minimum 512kbps download and 128kbps upload data speed, and 3GB per month data usage. The 3GB per month is limiting for shared internet access facilities, as outlined in the 2008 inquiry into regional broadband:

\begin{quote}
The Committee heard claims that broadband services were not being taken up by Indigenous communities because of the pricing, billing and the individually focused fixed-term contracts. It was explained to the Committee
that satellite services were available but lead times associated with
installation were lengthy…Instances of communities paying a high price
when the download limit was exceeded were raised. The Committee heard in
Daly River that consideration should be given to a funding model to ensure
that community access points (often non-profit organisations) are not unduly
cost penalised for exceeding the monthly usage quota (Glasson 2008, p. 72).

A number of reviews and programs have attempted to address inequities that are not
covered by the USOiii. The 2002 Telecommunications Action Plan for Remote
Indigenous Communities (TAPRIC) cited factors such as poor and inadequate
housing, isolation and harsh environmental conditions as barriers to developing
communications systems. The report recommended use of community facilities to
promote access to the internet where households are unlikely to pay for these services
themselves. Lifestyle was also a factor: ‘Public access is more affordable and is well
suited to the generally communal lifestyle of these remote communities. It also
provides a central point for community support and training’ (DCITA 2002, p. 6-7).

Networking the Nation (NtN), announced in 1997 and funded by the partial
privatisation of Telstra, included 60 projects ($35.1 million of a total $325million)
that were of significant benefit to Indigenous communities (DCITA 2002, 2005).
Under the NtN, communities were given responsibility for identifying
telecommunications needs and initiating action. As a result, the program supported a
wide variety of projects, including the Cape York Digital Network (public internet
facilities for 16 communities), UHF many-to-many radio networks and e-commerce
infrastructure for the Desart artists centres. The program was not intended to provide long-term financial support and not all projects survived (on the issue of sustainability see Simpson et al. 2002).

The question of remote internet access must now be seen as one facet of a broader strategy to address Indigenous disadvantage, also characterised as an unacceptable ‘divide’. In his National Apology on the Stolen Generations in February 2008, Prime Minister Kevin Rudd made a commitment to ‘Closing the Gap’. The national plan aims to improve outcomes in health, education, life expectancy and employment through an unprecedented cooperation between Commonwealth, State and Territory governments via the Council of Australian Governments (COAG 2008). Funding amounting to $4.6 billion over 10 years has been allocated to drive fundamental reforms in remote housing, health, early childhood development, jobs and improvements in remote service delivery. Targets include halving the gap in education by 2020 and halving the gap in employment within the decade.

The Indigenous Communications Program (formerly Backing Indigenous Ability) intends to expand public internet access and delivery of computer training in up to 120 remote Indigenous communities that have limited or no public access internet facilities. The internet access and training component of the Indigenous Communications Program will be delivered in collaboration with participating State and Territory Governments (COAG 2009). In July 2009, COAG agreed to commit $6.96 million to remote Indigenous public Internet access, including establishing
facilities in communities where there is limited or no public internet access, as well as maintenance and support of facilities (commencing in 2011-2012) and training in basic computer and internet use for up to 60 communities a year.

A significant aspect of the Closing the Gap strategy is the concentration of services and resources into fewer localities. The COAG agreement aims to raise the standard and range of services to a standard consistent with other non-Indigenous communities of similar size and location, as well as better coordination of services ‘in identified communities’ (COAG 2008, p. A26). Twenty-six towns were originally identified as ‘priority communities’, although the number was later revised to 29. The expectation seems to be that families will choose to move to the chosen locations, for schools and jobs – a controversial approach that raises complex issues concerning homelands, belonging, safety and health.

The (COAG) Coordinator General for Remote Communities report of December 2009 states that 19 of the 29 have public internet facilities. It can be assumed that six of the priority towns are also likely to qualify for very fast broadband under the NBN, as they have populations of more than 1000 (according to ABS stats). According to Telstra, 23 of the original 26 towns are already in areas covered by ‘Next G’, their 3G network. In December 2009, the Prime Minister committed $7 million for 17 ‘Health e-Towns’ in the Northern Territory. The funding, part of the Government’s Digital Regions Initiative, was to ‘support the development of local networks and ICT enabled health, education and training services’ (Rudd, 10/12/2009)
The Infrastructure Divide

The difficulties of internet access are clearer in the case of an example such as the Central NT statistical subdivision outside of Alice Springs (map 1), where the Indigenous population is about 13,500 Aboriginal people. The largest communities in this region number up to 600 residents, whereas in the Top End the largest settlements have up to 2000 people. As a consequence, the cost of providing coverage per head of population is higher. According to the 2006 data, the number of Indigenous people with access to the internet at home is 2.2% in this area, compared with 57% for non-Indigenous people in the same region.
Some communities in this area have fixed line internet services, a few have mobile coverage and others have neither. The presence of optical fibre, which is the usual backhaul technology for mobile base stations, is largely limited to the proximity of the north-south road corridor (Stuart Highway, Darwin to Adelaide via Alice Springs). Outside the fibre serviced areas, even where residential phone lines are present, most of these phone services are provided on low-capacity radio infrastructure that does not have the speed per service to support effective data communications. Wired broadband to the home is rarely an option.
Telstra is the sole provider for terrestrial wireless broadband in much of central Australia, with no competition between mobile carriers outside of the Alice Springs township and Yulara (which provides accommodation for visitors to Uluru). It is worth noting that the Indigenous population living in remote and very remote parts of Australia is miniscule in market terms, making up only 0.54% of the total Australian population, or 108,143 of 19,855,288 people (2006 Census figures). According to Telstra, Wireless broadband currently reaches 99% of the Australian population and extending mobile phone coverage is one of the company’s priorities. The major rival providers, Optus and Vodafone, have 3G coverage of 96% and 94% of the population respectively. While mobile phone coverage will go some way to providing a terrestrial option for both voice (phone) and data (Internet access) traffic, its effect is and will continue to be quite limited in central Australia.

Coverage for Indigenous residents of central Australia is now limited to about 7000 people in seven discrete locations (just under half – the total population being 13,500 people): Ali Curung (300 people), Alice Springs (Town Camps, other town residents, Amoonguna gets coverage – collectively 4500 people), Uluru (Mutitjulu gets coverage - 200 people), Ti Tree (Pmara Jutunta has coverage 200 people), Hermannsburg (500 people), Santa Teresa (500 people) and Yuendumu (600 people). Erldunda – a highway stop – also has coverage but there are no communities nearby. An extension program that was announced in July 2008 would increase the population covered by approximately 1300 people, or 10%, in four further locations.
(Alpurrurulam, Ampilatwatja, Kaltukatjara, Walungurru). However, the present status of this program is unclear. In geographic terms, the coverage is about 0.4% of the land area and would increase to about 0.6% with the announced increases. There are approximately 300 small communities and outstations totalling 5000 people, most of whom receive no mobile coverage and are not projected to do so.

As part of the legislative changes preceding the sale of the third tranche of Telstra in 2005, the Parliament of Australia established the Regional Telecommunications Independent Review Committee (RTIRC) to assess the adequacy of telecommunications in regional, rural and remote parts of Australia. The resulting report found that ‘Generally, Indigenous people in remote communities purchase mobile phone services in preference to fixed voice telephony services’ (Glasson 2008, p. 75). The report acknowledged that fixed voice telephony services are an unpopular choice for remote Indigenous households due to lack of mobility and pricing, noting that there is ‘strong evidence of a cultural misalignment between the technology and the intended user’ (Glasson 2008, finding 1.5.1). In terms of internet access, mobile telephones would therefore seem to be a good option. However, mobile based Internet connections are not necessarily suitable for situations requiring a large download volume such as shared community services, because of the high tariffs that apply for high data download volumes on mobile services. Mobile broadband, as it is currently structured, suits individual users who are willing to enter into standard contracts with a telecommunications provider but, as the Goulburn Island case demonstrates, this brings with it a different set of problems. The impact of a substantial personal
expense, which the Goulburn Island residents claimed was not adequately explained to them, complicates any basic assumptions around the social benefits of access.

Many of these issues affect all forms and locations of Internet access in Indigenous communities, whether it is shared access in a community centre, or individual access in the home or outside it. In the following sections, we raise the question, as yet relatively unexamined by the research, as to whether community centres are the only model worthy of consideration for internet access in Indigenous communities. Is there a place for home internet as a complementary or alternative approach? What value do the different modalities of access have in supporting individual and family livelihoods?

**Community internet centres**

Using the 2001 census data, A.E. Daly compared home internet access to internet users generally (Daly 2005). She found that the proportion of general use – which might include access at a community centre, library, workplace or home – among Indigenous populations of SA and the NT (outside of the capital cities) was three times higher than home use, although both were very low (only 1% of Indigenous people in those areas were using the internet at home in 2001). The increase between home and general use for the non-Indigenous population was nowhere near as large (only 1 percentage point higher in the NT), indicating that community centre use – access outside of the home – is much higher for Indigenous populations. As the 2006
census only measured internet access from private dwellings, it is not possible to
know the proportion of the Indigenous population accessing the internet outside of the
home (the ‘general use’ category in Daly’s study). However, the percentage of the
Indigenous population with an internet connection in occupied private dwellings
remains low, at just 7% for remote and very remote parts of the Northern Territory
(including the Top End, as opposed to the Central Statistical Subdivision discussed
above). It is likely that community access centre use is still the main form of access
for the remote Indigenous population.

Community access facilities in remote Indigenous communities provide an entry point
for computer and internet use and training. When it comes to addressing a digital
divide, these communal sites also have the advantage of avoiding the social policy
quandaries of housing and alternative ownership models. For their 2006 study of
community access facilities for the Department of Communications, Information and
the Arts (Grants to Fund Telecommunications Consumer Representations and
Research Program), McCallum and Papandrea visited 14 communities in the
Anangu Pitjantjatjara Yankunytjatjara (APY) lands of northern South Australia. The
research, which included an inventory of facilities and qualitative interviews with
community members and administrators, concludes that

knowledge centres or rural transaction centres are the ideal model for
encouraging internet use in remote Indigenous communities. Information and
communication technology should be seen as a community capacity-building
tool and a pathway to improved social and health outcomes, and as such,
warrant the coordinated delivery of financial support from all levels of government (McCallum & Papandrea 2009, p. 1245).

Our survey suggested that the uses identified by McCallum and Papandrea in 2006 are still common: use within community centres is often for internet banking, music downloads and games. We do not yet know, however, whether this form of access is equitable compared with use in the home or whether the assumed barriers to home and mobile internet use are insurmountable. As Selwyn points out, an emphasis on availability can obscure more subtle disparities: ‘accessing online information and resources from a home-based computer or digital television set is not necessarily equitable to accessing the same materials via an open access workstation in a public library or other community-based ICT centre’ (2004, 347). The differences between media use in the public and private domains have yet to be adequately examined in the remote Indigenous context. In the final part of this paper we consider the assumptions attached to communal access and suggest longer-term policy priorities.

A report from September 2003 for the then Department of Communications, IT and the Arts, commissioned in response to the 2002 TAPRIC recommendations, noted that Commonwealth and State funded centres were already at risk and unlikely to be viable without government support (Farr 2003). The report found that cooperative centres with a range of stakeholders were more likely to succeed as funding overheads could be shared. Six years later, community access centres still suffer from lack of operational funds. In our survey of 34 of the larger Indigenous communities in central Australia (with a combined Indigenous population of 9724, or 72% of the Indigenous
population of central Australia outside of Alice Springs) we found that less than half of the communities had community internet access and, of these, many were only semi-functional.