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Digital divide in Australia: where the real invisibility lies

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1 Research problem

The 'digital divide' is an issue occupying more and more space in scholarly studies, especially in the fields of economics, sociology, business and information studies. The importance stems from the fact that for the past two decades the world is perceived as having entered a new form of economic activity – the so called 'information economy'. New terms, such as 'information capitalism', 'info-rich', 'digital divide', 'knowledge workers', etc. reflect the fact that this is a new area for both social sciences and business studies.

Numerous theories are being presented about where the world is heading once it has jumped on the 'information superhighway'. Some of these are utopian, some luddite, some call for the communalization of the new wealth, some decry the new 'info-imperialism' and some declare that due to the 'Infobahn' humanity has better hope at communicating across cultures and agendas.

The one thing the 'Infobahn' has so far failed to achieve is bridging the class divide. In fact, when access to information, and the ability to manipulate it, is the main competitive edge for individuals, lack of it can be detrimental to any form of economic progress. In the 21st century, some complain of 'information overload', while others complain of 'information famine'. And while 'techno-geeks' see panacea in more bandwidth, politicians in more legislation and educators in 'a laptop for every student', hundreds of thousands of already disempowered masses desperately in need of information become more and more alienated

from the era where thought is supposed to move 'at the speed of light'.
This article is a report on the effect of the 'digital divide' on segments of the Australian population that are already disadvantaged, showing that the digital divide is not a new way of alienation, but just another layer added to an already existing divide: the visible elite and the invisible Web of the dispossessed and now uninformed masses.

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2 Info-rich, info-poor: just cold statistics on a hot topic

The notion of the digital divide – information rich versus information poor, those with skill sets and big pipes versus those with few skills and infrastructure that has the performance characteristics of jam tins and string – is profoundly important. Alas, it is proving increasingly elastic as 'digital divide' becomes a mantra to justify a range of practical initiatives and digital pork barrelling. Taking Australia as an example, the statistics suggest that around 67% of Australian households are not connected to the Web and that users are young, male, earning in excess of $75,000, employed and living in metropolitan areas. Those on low incomes, without tertiary education, living in rural or remote areas, of Aboriginal and Torres Strait Islander heritage (native Australians), with disabilities, with a language background other than English and aged over 55 are less likely to be on-line.

Why? Barriers to on-line access include setup and access costs, lack of physical access, interest or confidence, or perceptions of irrelevance, security concerns, lack of skills or training, and illiteracy. Schement (1999) argues that the persistence of information technology gaps reflects ongoing payment for information services that involve recurrent regular decisions (e.g. having a regular income sufficient to pay a monthly bill) rather than information goods such as a television that are generally paid off in the short or medium term. Schement suggests that this could explain why poorer households experience less rapid and consistent diffusion of services such as the Web or telephone than they did with radio and television.

What about infrastructure? Despite the size of Australia, its population is one of the most concentrated in the world. In 1998, statistics from the Australian Communications Authority (ACA) suggested that 63% of Australia's total 6,8 million households are located in the eight State and Territory capital cities, 28% in regional provincial centres and 9% in rural and remote areas. An estimated 83% of all Australian households are within five kilometres of an exchange. The 2000 National Centre for Social and Economic Modelling (Natsem) report for Telstra on sociodemographic barriers to telecommunications use argues that the Australian 'digital divide' is one of income and social situation, not geography – questioning the government's concern with supply to rural areas (Lloyd and Hellwig 2000). It was prepared by the Communications Law Centre (CLC), Australian Council of Social Services (ACOSS) and the National Centre for Social and Economic Modelling. Natsem is significant because it highlights the divide within metropolitan and regional Australia, in contrast to federal government initiatives focused on 'the bush' (and Tasmania). It argues that the Australian 'digital divide' is one of income and social situation, not geography per se and that use of the Web had little link with where people lived.

Some critics have questioned the notion of the Internet as 'the global information network', arguing that the G8 nations (USA, Canada, France, Germany, Italy, Japan, Russia and UK) account for under 20% of the world's population, but 'own' 80% of Internet hosts and most traffic. Depending on whose count you believe, the USA 'owns' 83% of the G8 hosts. Much of the discussion about the digital divide is predicated on a belief that there is one divide: essentially that relating to the size of the pipe (or its absence) connecting people to national or global information infrastructures. Other discussion has been even more simplistic,

characterizing the digital divide as one where there is a simple solution (personal computers) for a complex problem (poverty). In fact there are different divides that cannot be effectively addressed through a simplistic 'one size fits all' model. In essence, those divides involve differential access to computers, the Web, telecommunications and information. That differential access involves variables such as income or poverty, education, race, gender, age, ethnicity, disability and geography. It includes unequal access to knowledge, training, resources, job opportunities and the practices of the information economy.

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3 Falling through the Web: forgotten rurals

The status of rural Australia has always been a reason of concern, unfortunately not for the government. Eight years of draught, bush fires, USA embargoes on beef export, ghost towns, the privatisation of the telephone services, youth unemployment, deteriorating road infrastructure, soil salinity and rising crime are but a few issues that nag at the big heart of this nation. Lack of access to information can now be added, together with the removal of government service offices from country areas, the closure of banks and the introduction of national competition policy. All this has ignited some concerns among those in rural and regional Australia about being left behind in the new globalized and Internet-connected world. With this has come an anxiety that uneven distribution in access to the Internet may further separate the country from the city.

The Internet has the potential to transform the economic and social prospects of Australians living in rural and remote areas. There are, however, a great many issues to be addressed before that potential can be achieved. The most important of these are communications infrastructure and the availability of information and services on the Internet. The reality is, however, that a significant proportion of rural Australians will continue to suffer from poor communication links for some time. Moreover, the problem of 'information overload' on the Internet is, if anything, getting worse. The result is that much information of interest to rural and remote Australians is effectively inaccessible to many of them. Groves (2000) calls his paper on attempts to solve the accessibility issue a 'cry of frustration'; in his opinion, even where there are active Internet service providers (ISPs) functioning, the Web sites aimed at the rural population are often inaccessible to search engines, full of useless graphics hogging valuable bytes and interfaces that are difficult to navigate. Simply said, the sites were designed by urbanized, sleek techno-geeks to look cool, with no 'Farmer McDonald' on the advisory board.

Living in rural or regional areas of Australia does not in itself determine Internet access, but there remains a regional dimension to the digital divide. There has been an increase in the percentage of people in rural and regional Australia who have access to computers at home and the percentage of country people with access to the Internet has more than doubled since 1998. However, use by country people has yet to reach the level of use in capital cities. Rural and provincial electorates have fewer young, tertiary educated people and high-income earners than city electorates, factors that determine Internet usage. The cost of Internet access remains higher for those who live in rural and regional Australia compared to those in metropolitan areas. Country people are beginning to use the Internet to shop, pay bills and access political information on-line. Parliamentarians are increasing their use of personal homepages in an effort to connect with their constituents. Whether or not rural and regional Australians are on the disadvantaged side of the digital divide remains a contested issue. In 2000, Internet speed, cost and availability were the third most significant grouping of issues expressed in submissions to the Telecommunications Service Inquiry (2002). Prior to this, the Time Running Out Report (Standing Committee on Primary Industries and Regional Services 2000) had recommended that universal service obligations be extended to include

Internet access for regional and rural Australia, to combat geographical disadvantage. Yet press reports in the past 12 months offer various interpretations on the issue, some highlighting the lag between rural and regional Australia and the cities, others reporting 'Bush no barrier to Web access' (Stensholt 2000) and 'Bush-city digital divide a "myth"' (Gillchrist 2000)

Metropolitan Australians have the highest access rate (40%) with other urban areas, that is, provincial centres with populations greater than 2500, showing the lowest rate of access (28%). The access rate for rural areas falls between these two, at 33% (Hellwig and Lloyd 2000). In projecting who is likely to remain unconnected to the Internet, Natsem findings indicate that those unemployed in rural Australia are much less likely to have Internet access at home compared to the unemployed in metropolitan areas. Table 1 contains data provided by the Australian Bureau of Statistics (2001) that indicate that, while there has been an increase in the percentage of people in rural and regional Australia who have access to computers at home, there remains a gap between them and those who live in capital cities. Similarly, the percentage of country people with access to the Internet has more than doubled since 1998 (with significant growth between 1999 and 2000), but has yet to reach the level of use in capital cities.

Table 1 Computer and Internet access in city and country areas*

	Access to computer (at home)			**Access to Internet (at home)**		
	City	**Country**	**Gap**	**City**	**Country**	**Gap**
November 1998	50	43	7	22	13	7
November 1999	53	44	9	30	17	13
November 2000	59	52	7	40	32	8

*City refers to capital city statistical divisions.

Age is considered to be one indicator of Internet use, with the take-up rate being higher among younger people. While there is an even spread of older people across electorate type, a smaller percentage of young people live in rural and provincial electorates, which could affect the lower rates of overall Internet use in the country. There are also different access rates between young people. Research suggests that low access rates among young people are affected by family income, school sector (Catholic and government), school location (rural and low-income areas), school size (small) and gender (Doharty 2000). Given that many country schools are small, either Catholic or government and, as is expanded on below, are in electorates with low incomes, young people in rural and regional Australia could be at a disadvantage. The Human Rights and Equal Opportunity Commission's report on rural education found that, in many rural and remote areas, Internet access was costly and unreliable which, for students undertaking distance education at home, could prove a serious disadvantage. The report also shows that those with tertiary qualifications are under-represented in rural electorates compared to metropolitan electorates. This is important given that the level of educational attainment is a key factor in determining access to the Internet. In Australia, those with a university education are two and a half times more likely to have access to the Internet at home (Zappalà, Green and Parker 2000). Universities tend to provide an environment rich in information technology (IT), providing students with free e-mail, Web-surfing facilities, computer laboratories, as well as encouraging direct use of the Internet for research, training and technical support. Those without tertiary education are thus

more likely to be in need of training and support facilities to enhance computer literacy and IT skills and knowledge.

Many Australians do have 'reasonable' access to the Internet. A small percentage, those who live in rural and remote Australia in particular, have very limited access. But it is precisely this majoritarian position that is problematic for those who live in rural Australia and feel that their service levels seem to matter less because the majority of Australians are well serviced. Some commentators suggest that there is a rural perception of inequitable service, when in fact a sufficient service is being provided (Warren 2000). Yet this perception held by rural Australians is underpinned by one of the original objectives of Australian Federalism, which had as part of its foundation a commitment to equity over density of population. While the provision of telecommunications is no longer solely provided by government, there was a time (which is still fresh in the memories of many rural Australians) when they could at least expect the right to similar services. In other words, there has been policy tradition underlying the principle of horizontal equalization, which has informed rural peoples' expectations of entitlement to the same level of service as those in metropolitan Australia. Hence the recommendation for the extension of universal service obligations to cover Internet access for those who live in country Australia (McElhinney 2001).

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4 New Australians: why is the World-Wide Web in English if we are multicultural?

Australia prides itself on being 'multicultural', whatever the term means. No attempt at defining the construct will be made here, as it is out of place in this article. What is of interest is that the federal government acknowledges 42 languages other than English as 'community languages', meaning that there are sizeable numbers of speakers of that language *as their first language* among the Australian citizens and permanent residents. Language services in Australia have always been the pride of the previous labour government, with a sizeable funding being allotted for 'equity of access' to information and services. Unfortunately, the current coalition government has different opinions on what this equity entails (preferably mastering English quickly). The government defunded bilingual community workers, does not provide money for multilingual literature to community organizations and has disbanded the government’s translating service, leaving private translators to do the job. Many non-English speaking background (Neseb) broadcasting services have been left high and dry, and even Australia’s multicultural icon and international award winner, Special Broadcasting Service, now has to depend on advertising to survive. Many see this as a slow return to the 'white Australia' policy, however impossible this may seem at the time, given the demographics of the country. It is, however, a return to 'English Australia,' for sure.

When the Australian government touts the universal accessibility of on-line information to all Australians, and when worried or dissenting voices appear in print, the segment of population officially named 'New Australians' or Neseb gets a rather rare mention. Whether this reflects selective blindness on the part of Australian researchers, or a strong belief that the percentage of Neseb who cannot communicate in English at all is small enough not to warrant research, is beside the point. The fact is that children from non-English speaking families newly arrived in Australia, women from Neseb families and elderly members of Neseb communities are being actively discriminated against in that their access to on-line content is severely limited. As such, they miss out on important government services and have less than adequate knowledge of the rights and opportunities for development. Although there are a few attempts at targeting migrant population in terms of facilitating Internet use, these end up servicing the more mobile members of Neseb communities, that is, young males.

It also isn’t very helpful that most of the on-line content is actually in the English language. Global Reach, an Internet marketing company, has published statistics on the languages used by those on-line. The Global Reach (2002) study considered the number of users per language. Global Reach suggested that as of 2001 the proportion of the on-line population with English as the first language is 40,2%, Chinese 9,8%, Japanese 9,2%, Spanish 7,2%, German 6,8%, Korean 4,4%, Italian 3,6%, French 3,9%, Portuguese 2,6%, Dutch 2,1% and 'Other' 10,2%. Inktomi's Webmap (Fletcher 2001) identified 1,6 billion pages, of which 86,55% were in English, 5,83% in German, 2,36% French, 1,55% in Italian, 1,23% in Spanish, 0,85% in Portuguese, 0,54% in Dutch, 0,50% in Finnish, 0,36% in Swedish and 0,34 in Japanese. Other languages bring the total to over 100%.

An interesting study (Barraket, Payne, Scott and Cameron 2001) shows that at Australian tertiary institutions students from non-English speaking backgrounds are using computers more frequently than the control group to e-mail staff and fellow students, read course notes, and find out what subjects are available; and have a higher preference for contacting social groups or other students via computer. The findings support theoretical literature which suggests that on-line resources benefit students from non-English speaking backgrounds, as they allow them to consider and review course content, and thus to translate new ideas into knowledge. However, the study found that lack of access to culturally appropriate technological training affected Neseb students.

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5 Walkabout in info space: Aboriginal dreams and the Internet

There is an estimated 418000 Australians who identify themselves as being of Aboriginal and Torres Islands descent. The stress is on the word 'identify', which is more social than ethnic in meaning. This is a sad remnant of those native Australians and forms only 2% of the whole Australian population (ABS 2001). They also form the end of the pecking system, with all the accruing problems related to being in that position: rampant unemployment, lack of education, chronic alcohol and drug problems, crime, domestic violence, child abuse, lack of access to services (most still live on remote 'missions'), health problems and racial discrimination, to mention a few.

The percentage of Aboriginal and Torres Strait Islander people living in rural electorates is significantly higher than in city electorates, and many live in remote parts of rural Australia. The Natsem report did not investigate access to computers and the Internet by indigenous communities. However recent reports commissioned by governments in NSW and the ACT indicate that Aboriginal and Torres Strait Islanders are less likely to have computers at home and are much less likely to have access to the Internet (Clark 2001). As part of the 2001 budget, the federal government has committed $400000 for this year for the telecommunication needs of indigenous communities (Moloney 2001). This amounts to less than a dollar per an Aboriginal person. Since it costs $200 to simply install a telephone line in a house within 5 km of an exchange, and most of the Aboriginal communities live in desert areas where there are no exchanges, the government’s magnanimity seems totally out of proportion to the problem.

For urban Aborigines access to on-line information is 'reasonably' available – especially through public libraries. However, it is a fact that Aboriginal children often drop out of school at a very young age, and therefore never learn the skills necessary to access information in printed material, let alone in electronic format. Another issue is that most of the 'Aboriginal' Web sites are designed by non-Aboriginal people and are thus culturally inappropriate, even to those members of the community who can access the content. For those very rare Aboriginals who make it to tertiary education, Barreket et al. (2001) found

that they tend to use e-mail less to contact their lecturers and other students (this could be due also to the fact that their's is a very face-to-face culture), that they had very poor levels of information literacy as compared to other students, lacked access to technical training and had no personal Web works that could facilitate technical support. They also tended not to stay at the campus for some time and thus had less exposure to computers and the Internet.

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6 Aboriginal and Torres Strait Islander people

Islander students tend to call more for personalized peer mentoring and tutorial assistance than IT support and developmental opportunities, suggesting that technologically facilitated education may not be appropriate to the learning styles of some students from this group.

An example of how Aboriginal access to on-line information is 'facilitated' can be seen in the University of Technology Sydney Jumbunna Centre. Jumbunna Centre for Australian Indigenous Studies, Education and Research provides six computers within the centre that can be accessed by indigenous students. These computers are provided to ensure that indigenous students have some access to IT facilities in a culturally appropriate environment where Aboriginal staff can assist with IT enquiries or problems that the students are experiencing. It is important to note that the facilities provided are not a complete alternative to common and faculty-based computer laboratories: only Macintosh computers are available and some of the applications are not compatible with faculty-based applications; most of the computers do not have Internet access; not all staff in Jumbunna have technical expertise in IT; and the computers and software applications are not routinely upgraded or serviced in the same way as common facilities. Both one-to-one and group computer workshops are made available to indigenous students who wish to upgrade their computer knowledge and skills through the Aboriginal Tutorial Assistance Scheme.

Barlow and de Lacey (1998) suggest that, for many indigenous Australians, ‘access to and competence in technologies often appear outside of their schooling and social environment and this creates a barrier’. The Indigenous Open Learning Steering Committee (1998) reiterates this observation.

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7 Less abled citizens

According to the 1998 Australian Bureau of Statistics, 19% of Australians have a disability. The 2001 Building Bridges Over the Digital Divide Report from the Commonwealth Human Rights and Equal Opportunity Commission (HREOC) provides an overview of 'the considerable progress made by government, industry and the community in making electronic commerce more accessible to older Australians and people with a disability (Ozdowski 2001). Close examination of the review and its laundry list of recommendations (including implementation by Commonwealth agencies of legislation and cabiWeb decisions) suggests that there is a long way to go. The report coincided with publication by the Australian Bankers' Association (ABA) of a Disability Action Plan, including a 16-page draft industry standard on Internet banking, and the report of the ACT Digital Divide Task Force. The Digital Divide page of the National Office For The Information Economy makes interesting reading.

Barriers identified by submissions and research materials included:

- Cost of access to computers and Internet connection

- Limited public access facilities for people who cannot afford their own equipment
- Limited sources of resources, assistance and information where adapted or customized equipment is required by people with disabilities and older people
- Needs for awareness, and training in use of, available options
- Inaccessibility of many Web pages to people with vision impairments, slower connections and older equipment
- Inaccessibility of many automatic teller machines, EFTPOS facilities and other similar devices, including public transport ticketing machines, to people with limited vision, manual dexterity or memory, or who are using a wheelchair
- Concerns for safety when using ATMs and security when using EFTPOS facilities
- Concerns regarding privacy and security of Internet transactions
- Difficulties in using interactive voice response systems (for bill payment and other services by phone) because of insufficient time provided for entry of information by the user, complexity of menus and lack of readily available recourse to a human operator
- Lack of provision, or delays in provision of materials in accessible formats (particularly in education), for reasons that include copyright or other legal difficulties and the formats in which publishers make materials available.

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8 Conclusion

It is obvious that a 'digital divide' exists for various reasons, and that much work needs to be done before the utopian dream of equal access can become a reality. Social trends and perceptions of the current Australian government, despite the lip service paid, tend to consciously diminish the importance of assisting the disadvantaged sectors of the community: the poor, the disabled, the Aboriginal, the Neseb, women and the elderly. The slow withdrawal of financial support and services is not limited to information provision, but can be seen in such areas as health, housing, education and transport. It remains to be seen if the 'digital revolution', unlike its predecessor, actually helps in bridging these social divides between the elite and the disadvantaged. At the moment, however, the rapid progress made by information and communications technology only seems to widen the gap between these two social groups in Australia.

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