8

Community and social

8.1   This report has already looked at the capacity of the NBN to facilitate social and community benefits in many different areas. For example, the NBN will enable improved access to health, education and other government services in regional areas and contribute to more economically and environmentally sustainable communities.

8.2   This chapter will examine some other social and community aspects, namely, the capacity of the NBN to:

- contribute to improved levels of social inclusion and social interaction;

- enable new methods of community interaction;

- promote more flexible working arrangements and improved work–life balance;

- enable new ways of participating in recreational and cultural activities; and

- facilitate better access to information and digital media.

8.3   This chapter will also briefly examine risks and opportunities presented by the NBN in regards to safety and criminal activities.

Improving social inclusion and interaction

8.4   The term 'digital divide' is frequently used to describe the current state of telecommunications in Australia. The divide is between those who are able to take full advantage of the opportunities offered by technologies such as broadband internet and those who are not. The Department of Human Services (DHS) defines the digital divide as 'the imbalance in both

physical access to technology and the resources and skills needed to accrue benefits from use'.[1]

8.5   The Committee is aware that many social factors may impact on the extent of the digital divide. According to the Australian Bureau of Statistics (ABS), 26 per cent of Australians aged 15 years and over did not access the internet in 2008-09. This rate was significantly higher for people on low incomes, those aged over 55, the unemployed, Aboriginal and Torres Strait Islanders, those from non-English backgrounds, those who did not complete Year 12, and those living in regional and remote areas of Australia.[2]

8.6   Where previous sections of this report have focused on the capacity of the NBN to improve access to health, education and employment services, this section will examine the NBN's capacity to enable greater levels of social inclusion and interaction. Evidence received by the Committee indicated that overcoming the digital divide would go some way to improving the welfare of people who are currently isolated or disadvantaged.

8.7   The Australian Information Industry Association (AIIA) told the Committee that the internet has a powerful role in overcoming social exclusion:

> The history of the internet is evidence of the impact that better and more diverse access to information has on improving social capital.
>
> We know from experience that online access to information and services plays a vital role in reducing social isolation and increasing social cohesion. The last 20 or so years of the internet is evidence of how disenfranchised and isolated individuals and communities have been reconnected through the internet and virtual communities of interest.[3]

8.8   Similarly, the Australian Communications Consumer Action Network (ACCAN) wrote that the NBN could have a significant impact in improving the lives of disadvantaged people:

> We view the NBN as having the potential to open up new opportunities for the most disadvantaged people in our

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1   DHS, *Submission 186*, p. 9.

2   ABS, *Household Use of Information Technology Australia 2008-09*, 16 December 2009, pp. 35–36.

3   AIIA, *Submission 184*, p. 23.

community and to create a range of new educational and economic benefits as the effect of geographic isolation is reduced.[4]

8.9   Optus told the Committee that, beyond the intrinsic benefits, there are broader economic benefits to improving social inclusion and that the NBN could play a key role:

> The social inclusion agenda recognises that there are significant dividends, both social and economic, from engaging the community more fully. Social inclusion improves our capacity to learn, work and engage. Social inclusion increases the number of skilled and able workers and can assist to reduce the number of disadvantaged communities. The availability of technology is a major contributor to social inclusion and the NBN's potential to re-engage and reinvigorate communities is significant.[5]

8.10   The Committee heard that the ubiquitous nature of the NBN was the key to the full range of benefits being realised for those most disadvantaged. The Department of Broadband, Communications and the Digital Economy (DBCDE) submitted:

> Ubiquitous, reliable, high-speed broadband can contribute towards achieving greater social inclusion, deliver consumer welfare and social benefits, and lead to enhanced employment outcomes. Research suggests that exclusion from networks that reach almost all people has the potential to negatively affect those excluded.
>
> The NBN's ubiquitous nature means that all Australian premises will be able to more readily access the internet if they so choose.[6]

8.11   Adult Learning Australia (ALA) similarly submitted that ubiquity, rather than speed alone, is the key to building social inclusion:

> It is our experience that technology can greatly enhance the learning experience, and build social inclusion. We believe that these can be dramatically increased by the NBN, through the right policy approach, not just because of the NBN's speed, but more because of its ubiquitousness.[7]

8.12   Much of the evidence received by the Committee about social inclusion revolved around the NBN's capacity to increase social interaction between

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4   ACCAN, *Submission 128*, p. 3.
5   Optus, Submission 179, p. 12.
6   DBCDE, *Submission 215*, p. 81.
7   ALA, *Submission 163*, p. [1].

family and friends, particularly by enabling two-way video communication over distance. For example, Mr Brian Hales, Economic Development Advisor for the City of Onkaparinga, in South Australia, told the Committee:

> It spans everything we do. How communities relate to each other and communicate with each other. We have a lot of single households, as a lot of regions do have, and loneliness is always a factor there. Anything we can do to reduce that is good. Connecting our communities via video would be great. They are connected by phone at the moment I suppose, but there is a greater amount of information they can send down the line.[8]

8.13   It should be acknowledged that online social interaction, including over video, is intended to supplement personal interaction, rather than be a substitute for person-to-person contact. Hobart City Council noted that the provision of digital infrastructure, exciting as it may be, can be utilised as a 'medium to value-add' to human contact, and does not have the capacity to replace it.[9]

8.14   In a report commissioned by Huawei, British researcher Dr Tim Williams found that ubiquitous fast broadband can have a major impact in improving community connectedness. However, he cautioned that building the network alone would not be enough:

> The real challenge of broadband in Britain and Australia is not just to enable access. It is to ensure *use* by people and communities of all kinds. It is to see the objective as not just the building of a technical network but the creation of a 'networked society' with all the benefits of online participation for all which flow from it.[10]

8.15   Several inquiry participants also told the Committee that action will be needed to ensure the disadvantaged are able to reap the benefits of the NBN. If not, there is a risk of the NBN inadvertently extending the digital divide rather than overcoming it. For example, DHS submitted that:

> … internet use can play an important role in facilitating social inclusion, particularly in the social, economic, political and cultural domains. However, this requires a concerted effort to

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8   *Committee Hansard*, Victor Harbor, 5 April 2011, p. 31.

9   Hobart City Council, *Submission 98*, p. [2].

10   Dr Tim Williams (Huawei), *Connecting Communities: The impact of broadband on communities in the UK and its implications for Australia*, February 2011, p. 18.

address issues beyond access, by helping people develop the skills, literacy and knowledge needed for effective online engagement.[11]

8.16   DHS also noted the need for careful monitoring to avoid future service offerings under the NBN widening the 'digital divide'. DHS identified increasing demand for sophisticated applications and content requiring faster connection speeds as a risk for driving 'technological solutions that will reduce accessibility for remote-area or disadvantaged customers'.[12]

8.17   These views were echoed by others, including the University of Newcastle, which noted that the community benefits that arise from the NBN should be available to all. The University observed that 'the NBN has the potential to exacerbate rather than remediate the digital divide,' and called for a concerted effort from all levels of government to ensure improved access levels for people from low socio economic backgrounds, older members of society, and the disabled and disadvantaged. The University noted that these groups will continue to be digitally excluded unless such efforts are made to ensure access.[13]

8.18   The remainder of this section will discuss the role of the NBN in promoting social inclusion with regard to the key groups noted in the above discussion, that are currently disadvantaged by the digital divide. The challenges and opportunities around overcoming the divide will be discussed briefly in the context of each group within this section, and then more broadly in Chapter 11.

Australians in rural and remote areas

8.19   According to the Australian Bureau of Statistics (ABS), 34 per cent of people living in outer regional or remote areas did not access the internet in 2008–09, compared to 23 per cent of those living in major cities.[14]

8.20   Mr Mark Needham, member of the Regional Telecommunications Independent Review Committee (RTIRC) that reported to the Government in 2008, told the Committee that people in rural areas are often frustrated at the lack of services available to them and the inadequacy of the 'stopgap, second-rate, second-class' services that are made available. He also explained that a lack of telecommunications services has a significant impact on the psyche of Australians in remote areas:

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11   DHS, *Submission 186*, p. 11.
12   DHS, *Submission 186*, p. 11.
13   University of Newcastle, *Submission 93*, p. 15.
14   ABS, *Household Use of Information Technology Australia 2008–09*, 16 December 2009, p. 36.

> From a social inclusion perspective … people feel isolated. People
> feel they are not part of the whole. They cannot do the things they
> see some people supposedly doing on the television or they hear
> about. The effect of not having equitable services is that they do
> not feel part of the whole.[15]

8.21   The Committee heard that the NBN has the potential to redress these
        issues. Regional Development Australia (RDA) Yorke and Mid North
        (South Australia) told the Committee that by its extension to small towns,
        the NBN's greatest benefit will be 'the connection between communities
        and the reduction in isolation of individuals'. RDA Yorke and Mid North
        further noted that:

> Improved access to broadband services in regional areas will allow
> youth to study, socialise, shop and keep pace with their
> generational counterparts in the city, watching the latest movies,
> listening to the latest music and playing the latest online games.[16]

8.22   Enabling increased social interaction between family and friends,
        regardless of distance, was identified as a key advantage of the NBN for
        rural and remote residents. The National Farmers' Federation told the
        Committee that the NBN could enable a range of new ways for rural
        Australians to interact:

> The NBN is also likely to provide opportunities to link groups
> within the community across regional Australia and provide social
> services and support. Opportunities range from: connecting
> industry members (for example Dairy Australia's web forum); to
> providing mental health support to individuals (for example the e-
> headspace counselling service); to forums which connect and
> support individuals who may be isolated by circumstance or
> geography.[17]

8.23   Dr Anna Williamson, General Manager of Policy and Advocacy at the
        Leukaemia Foundation, informed the Committee that broadband-enabled
        communication technologies will particularly benefit sufferers of illness in
        rural areas, enabling them to interact in online forums with specialists and
        other sufferers of the same condition:

> A lot of people with these disorders seldom meet someone with
> the same condition. If you are in rural or regional Australia, that is
> further compounded because there are fewer people there. It is

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15   *Committee Hansard*, Brisbane, 18 April 2011, p. 23.

16   RDA Yorke and Mid North, *Submission 121*, p. 13.

17   NFF, *Submission 197*, p. [4].

> really important for patients on this journey to have peer support. … So it is really about improving access to information and also dealing with the tyranny of isolation and distance.[18]

8.24 Mr Robert Walker, Chief Executive Officer of AgForce Queensland, advised that by reducing social isolation the NBN could help address the high rates of mental health issues in regional areas:

> There is also a very high proportion of mental illness in the bush and I think that has been borne out by recent floods. Due to the remoteness of some of these properties and isolation … there is an inability for social interaction. We see this as a tool for producers to greater engage with their communities in a social scene. We hope that if they are able to do that the prevailing issues of mental health, mental illness and suicide in regional and rural Queensland can be diminished.[19]

8.25 The Committee also heard that the ability to maintain interaction with family and friends could be a factor in helping organisations in remote areas attract and retain staff. For example, Mr Paul Nicholls, Director of Strategic Projects in the Office of Research and Development at Curtin University, said that the NBN 'has the potential to improve the mental health of these employees in their current situations by building tele-presence suites and enabling them to engage in their children's education or just catching up with their wives or husbands'.[20] Similarly, NICTA explained that the NBN would particularly benefit regional areas as workers in knowledge-based industries would no longer need to be 'uprooted' from their local communities to move to the city.[21]

8.26 McKinlay Shire Council submitted that not only could fast broadband enable people in remote areas to connect better with family and friends, but that ubiquitous access to broadband is a matter of equity:

> … the NBN will supply faster connections for residents wishing to communicate visually with family and friends, through media sources such as Skype. Although McKinlay Shire's physical location may place large distances between loved ones, the NBN will assist in eliminating this void. Irrespective of our remote location, residents of McKinlay Shire deserve equity of service.[22]

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18 *Committee Hansard,* Brisbane, 18 April 2011, p. 51.
19 *Committee Hansard,* Brisbane, 18 April 2011, p. 41.
20 *Committee Hansard,* Perth, 5 May 2011, p. 19.
21 NICTA, *Submission 198,* pp. 30–31.
22 McKinlay Shire Council, *Submission 31,* p. [3].

8.27   McKinlay Shire Council, along with other inquiry participants,[23] questioned the adequacy of the NBN's wireless and satellite services to deliver these outcomes for the residents of smaller communities. Issues of adequacy of services will be considered in more detail in Chapter 9 on network capacity and technology, and Chapter 11 on encouraging uptake.

Indigenous Australians

8.28   Data from the ABS shows that 38 per cent of Indigenous Australians did not access the internet in 2008–09, compared to 26 per cent of other Australians.[24] A recent study undertaken in three remote Indigenous communities found that less than 6 per cent of participants had a computer, and 58 per cent had used a computer at some time in the past. Of this 58 per cent, one third had never used the internet.[25]

8.29   The Indigenous Remote Communications Association (ICRA) told the Committee that, although improved telephony services were a higher priority, access to broadband services could have a major social and economic impact on remote Indigenous communities:

> Access to broadband telecommunications can play a crucial role in overcoming inequities due to remoteness, and help to close the gap on access to health, education, training and employment opportunities and other basic services. It can provide important social outcomes in connecting up separated families and support the maintenance of Australia's unique Indigenous culture and languages. Broadband would reduce the vast digital divide for remote Indigenous populations and provide significant outcomes in terms of social, economic and cultural development and connect remote regions with the broader community.[26]

8.30   ICRA submitted that video-conferencing would be 'one of the most useful applications of broadband in remote areas'. It would enable benefits such as linking families with relatives who are away for extended periods;

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23   For example, Gloucester Shire Council, *Submission 6*; Wheatbelt East Regional Organisation of Councils, *Submission 40*; Get Connected, *Submission 43*; RDA Yorke and Mid-North, *Submission 121*, pp. 13–14; NFF, *Submission 197*; RDA Townsville and North West Queensland, *Submission 202*; NT Government, *Submission 209*; Mr Needham, RTIRC, *Committee Hansard*, Brisbane, 18 April 2011, pp. 14–25.

24   ABS, *Household Use of Information Technology Australia 2008–09*, 16 December 2009, p. 35.

25   ARC Centre of Excellence for Creative Industries and Innovation, the Centre for Appropriate Technology and the Central Land Council, *Home Internet for Remote Indigenous Communities*, 2011, p. 11.

26   IRCA, *Submission 82*, p. 5.

enhancing communication in Indigenous languages; facilitating regional meetings, including with groups; reducing costs and risks by reducing the need to travel; accessing services such as tele-health and education; reducing the need for travel to travel for court hearings and probation meetings; and reducing unnecessary incarceration.[27]

8.31   Other organisations also told the Committee that the NBN could help improve communication and services for their Indigenous residents. For example, the Eastern Regional Digital Corridor NSW submission, prepared by the Central Coast, Hunter, Mid North Coast and Northern Rivers RDAs, said that the NBN could enable governments to deliver substantially improved health and education services for the region's Indigenous population.[28] Kiama City Council submitted that the NBN could help them to develop improved methods of engaging with Indigenous residents who are reluctant to attend formal community meetings.[29]

8.32   Based on feedback from Indigenous people of Wilcannia and Menindee, RDA Far West NSW suggested in its submission that there are particular barriers to be overcome in order to enable its Indigenous residents to take advantage of the opportunities of the NBN. These barriers include many Indigenous households not having an existing fixed line, computer or internet access; cost barriers; perceptions that the technology is out of reach or too 'grand or superior' for some Australians; a lack of public access computer facilities; and a lack of training and support.[30]

Older Australians

8.33   Dr Williams' report, *Connecting Communities*, includes statistics indicating that in the UK, three million people aged over 65 go longer than a week without seeing a friend, and 1.8 million go for more than a month.[31] The Committee heard that many elderly Australians also suffer from this type of social isolation, with the problem likely to increase as the population ages.[32] At the same time, the ABS found that nearly 70 percent of the 2.7

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27   IRCA, *Submission 82*, p. 13.

28   Eastern Regional Digital Corridor, *Submission 141*, pp. 14, 18.

29   Kiama City Council, *Submission 39*, p. [2].

30   RDA Far West NSW, *Submission 127*, pp. 6–7.

31   Dr Tim Williams (Huawei), *Connecting Communities: The impact of broadband on communities in the UK and its implications for Australia*, February 2011, p. 18.

32   National ICT Australia (NICTA), *Submission 198*, p. 31.

million Australians aged 65 years and over did not access the internet in
2008–09. This compares to just nine per cent of those aged 18 to 24.[33]

8.34   The Australian Local Government Association (ALGA), among others,
        told the Committee that access to broadband can be a powerful tool to
        help combat social isolation among older people:

> As broadband technologies become more affordable, an increasing
> number of older Australians will be able to access the internet.
> Although social isolation is not limited to older people, they form
> the greatest proportion of those who are classed as socially
> isolated. Older people in rural and remote areas and those who
> have mobility restrictions, through age or disability, are
> particularly at risk of social isolation. Access to the internet
> provides opportunities for learning, stimulation and contact.[34]

8.35   National ICT Australia (NICTA) advised that social isolation 'can be
        mitigated by educating the elderly about the benefits of being online and
        providing them with access to social networking tools that can make a real
        difference in their lives'. NICTA went on to say that 'these tools, coupled
        with other broadband-enabled remote monitoring services, facilitate
        independent living for the elderly, reducing pressure on aged care
        facilities'.[35]

8.36   Mr Daniel Brinkworth, Manager of ICT for Victor Harbour City Council,
        told the Committee that many people choose to retire in his region,
        requiring them to move away from friends and family. Mr Brinkworth
        said that broadband could help retirees keep in contact with those people:

> It is expected that on an individual level the introduction of better
> broadband services will assist residents, particularly retirees, to
> maintain contact with their family members and friends. It is
> expected that traditional types of communication such as voice-
> only telephones will be replaced with the ability to make video
> calls and the ability to interact with multiple groups at once, share
> pictures and videos all in real-time and, as prices lower, increase
> the amount of time spent communicating with loved ones.[36]

8.37   Similarly, RDA Yorke and Mid North submitted that retirees are able 'to
        maintain contact with their family without leaving their regional

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33   ABS, Household Use of Information Technology Australia 2008 09, 16 December 2009, p. 35.
34   ALGA, Submission 139, pp. 12–13.
35   NICTA, *Submission 198*, p. 31.
36   *Committee Hansard*, Victor Harbor, 5 April 2011, p. 4.

community', through using improved Skype, photo sharing and video linkages.[37]

8.38   Peel SeniorNet, an online seniors' group based in Mandurah, Western Australia, gave the Committee some suggestions on the type of barriers that need to be overcome to encourage seniors to connect:

> As seniors who use broadband, the world can be opened up rather than closed down with ageing. However, expenditure and software costs and extravagant over-costing of cartridges, inks, etc. put seniors off from investing in technology. ISP charges need to be free for seniors and much broader discounts for goods provided.[38]

8.39   ALGA told the Committee that while older Australians are actually increasing their use of the internet faster than any other age group, education, training and new interactive technologies will need be delivered to realise the benefits for this age group:

> There is an opportunity for the development of interactive technologies to specifically address social isolation. This must be accompanied by education and training opportunities to overcome the reluctance of many older people to use new technologies. Products specifically designed for older people could target the most isolated and at risk groups.[39]

8.40   'Broadband for Seniors' is a program currently funded by the Federal Government, and the Committee notes the recent announcement that funding will continue for an additional four years.[40] This program funds the operation of 2000 broadband kiosks across Australia and delivers free computer and internet training for seniors. ALA, which is involved in the operation of the program, told the Committee:

> The seniors involved report increased access to grandchildren and friends, of regularly hearing from family overseas, of accessing services online rather than attending in person and of feeling confident to volunteer in environments where computers are regularly used.[41]

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37   RDA Yorke and Mid North, *Submission 121*, p. 13.

38   Peel SeniorNet Association, *Submission 175*, p. [2].

39   ALGA, *Submission 139*, p. 13.

40   'Delivering for Senior Australians', *Joint Media Release*, 10 May 2011 <http://www.jennymacklin.fahcsia.gov.au/mediareleases/2011/Pages/b08_10052011.aspx>, viewed 25 July 2011.

41   ALA, *Submission 163*, p. [2].

8.41   ALA added that the NBN could significantly enhance the Broadband for
        Seniors program:

>   The potential of an NBN to enhance social inclusion programs like
>   Broadband for Seniors is enormous. The higher the internet speed,
>   the higher the capacity for peer to peer networking to mimic face
>   to face human interaction and therefore the more likely that
>   programs like Broadband for Seniors will bring in people
>   unwilling or unable to deal with the slow speed of our current
>   internet systems.[42]

Australians with disabilities

8.42   The Committee received evidence that the disability sector stands to
        particularly benefit from the roll out of high-speed broadband. The ABS
        found that in 2006, only 28 per cent of people who required assistance for
        their core activities had broadband access, compared to 48 per cent of the
        general population.[43] Physical Disability Australia (PDA) told the
        Committee that social isolation is currently a significant issue for many
        people with a disability:

>   People with disability repeatedly experience isolation as many are
>   unable to leave their own home due to the restrictions of their
>   disability or need assistance to leave their houses. This issue alone
>   will affect the ability to be employed in traditional work or to
>   circulate in their own community.[44]

8.43   The Committee heard that new technologies coupled with the NBN could
        help to reduce social isolation. ACCAN, among others, described how
        high-speed broadband could be used to greatly enhance the quality of life
        for people with disabilities:

>   As a recent report commissioned by ACCAN has shown, benefits
>   of high-speed broadband for people with disabilities include: TV
>   'access service' applications such as audio description and signing;
>   TV-based videophones; medical services; lip-reading possibilities;
>   video-relay services; video remote interpreting; talking books;
>   converting printed text to the spoken word; smart living or remote
>   monitoring applications.

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42   ALA, *Submission 163*, p. [2].
43   ABS, *Patterns of Internet Access in Australia*, 29 November 2007, p. 9.
44   PDA, *Submission 164*, pp. 2–3.

8.44   Ms Leah Hobson, National Policy Officer at the Australian Federation of
        Disability Organisations (AFDO), told the Committee that the NBN could
        provide exciting new opportunities for people with disabilities. These
        include the ability for people who are largely confined to their house to
        interact face-to-face with other people more often; the ability for deaf or
        hearing impaired people to communicate over video in Auslan; and the
        ability for blind children to immediately download talking books from an
        online repository instead of waiting for them to be available from a
        library. [45]

8.45   The Australian Federation of Deaf Societies (AFDS) told the Committee
        that deaf and hearing impaired people can face particular difficulties with
        regards to social isolation:

> The ability to communicate and interact with others is important
> to all people. Deaf people are no different, but they can find it
> difficult and often impossible, to communicate through methods
> traditionally used by hearing people … This can isolate deaf
> people from their community and put them at risk through
> chronic homelessness, mental illness and un/underemployment. [46]

8.46   AFDS explained that the deaf and hard of hearing community is likely to
        receive many positive impacts from the NBN, resulting in major 'social,
        employment and educational benefits'. The submission said that:

> Given the visual nature of Auslan, the potential for the NBN to
> allow deaf and hard of hearing people to communicate using
> video-conferencing and other video communication tools such as
> Skype is likely to be the biggest benefit for the deaf community. [47]

8.47   The Committee also heard that the NBN could enable new types of
        employment opportunities to open for people with disabilities, resulting
        in increased workforce participation. PDA submitted that:

> Employment using the internet is in our belief an untapped area of
> labour potential for people with disabilities who experience any
> number of difficulties in employment outside the home. PDA has
> for 15 years employed staff to work from home using internet,
> email and telephone and this has worked to our satisfaction
> without impacting on the disability of the staff. [48]

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45   *Committee Hansard*, Melbourne, 18 March 2011, pp. 78, 79, 82.
46   AFDS, *Submission 119*, pp. [7–8].
47   AFDS, *Submission 119*, p. [3].
48   PDA, *Submission 164*, p. 4.

Box 8.1   Video Relay Interpreting

Video Relay Interpreting (VRI) is technology that allows interpreters, deaf and hearing people to communicate through video link. This removes the need for an interpreter to travel and thus facilitates more ready access to interpreting services. Although VRI is being trialled in some areas, access is currently limited to specified sites that have connections capable of handling the upload and download speeds required for high-quality video communication.

The Australian Federation of Deaf Societies (AFDS) believes that the NBN will enable greater use of VRI, giving employers, hearing impaired employees and interpreters much greater flexibility. This is likely to result in greatly improved communications as well as improved employment outcomes.

In addition, the use of VRI through Skype is likely to result in improved access to government services and programs, health services, and educational resources.

Source: AFDS, *Submission 119.*

8.48   However, Ms Hobson of the AFDO cautioned that while increased employment opportunities could 'very clearly benefit people with disability', it would not be a good outcome if people with disabilities were only able to work at home because the rest of the built environment was inaccessible.[49]

8.49   In order to take advantage of the potential of the NBN for people with disabilities, the Committee heard that action would be required from governments. ACCAN submitted:

> Government should focus on supporting the development and implementation of these types of applications. Government action will be required as the private sector tends to be reluctant to introduce new services of benefit to people with disabilities when there are uncertainties about their likely take-up and commercial viability.[50]

8.50   In similar terms, Ms Hobson told the Committee:

> There has to be an understanding that, when it comes to people with a disability, the market does not always provide. Simply setting up a national broadband network and leaving it to the

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49   *Committee Hansard*, Melbourne, 18 March 2011, p. 79.

50   ACCAN, *Submission 128*, pp. 4–5.

> market to say, 'People with disability will automatically be covered. Everything will suddenly become accessible,' is not going to work that way.[51]

8.51   Ms Hobson suggested affordability and targeted education programs would be the key areas requiring government attention:

> When we are implementing this, we do need to make sure that the costs are kept low for people with a disability and low socioeconomic backgrounds. I am also mindful that, when the NBN is rolled out, we need to make sure that education about it is appropriate for a whole range of groups …[52]

Australians from culturally and linguistically diverse backgrounds

8.52   According to the ABS, 35 per cent of Australians born in non-English speaking countries did not access the internet in 2008–09. This compares with 24 per cent for people born in Australia, and 21 per cent for people born in the other main English-speaking countries.[53]

8.53   The Committee heard that the NBN would help non-English speaking Australians to increase their interaction with the local community and connect with their friends and relatives overseas.[54]

8.54   The NBN will also increase the availability of foreign language resources to Australian communities. SBS told the Committee that 'faster broadband speeds will create more opportunities for communities to engage with content created by SBS through online video and audio services, on-demand access, and other new services including third party content distributors.'

8.55   SBS informed the Committee about its recently launched Chinese language Virtual Community Centre (VCC):

> The VCC provides a new online destination for Chinese Australians. It is targeted to the needs of Australia's Chinese language community and provides content in Mandarin and Cantonese (with some English). The VCC aggregates all SBS content in Mandarin and Cantonese, with additional selected and commissioned online content. For example audiences can watch

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51   *Committee Hansard*, Melbourne, 18 March 2011, p. 81.

52   *Committee Hansard*, Melbourne, 18 March 2011, pp. 82–83.

53   ABS, *Household Use of Information Technology Australia 2008–09*, 16 December 2009, p. 35. 'The other main English-speaking countries' are not specified.

54   Canterbury City Council, *Submission 7*, p. [1]; Penrith City Council, *Submission 81*, p. [1].

> video catch-up versions of SBS's pilot Mandarin News Australia
> …
>
> The VCC enables a deeper and richer engagement with SBS's
> Mandarin and Cantonese speaking audiences and enables those
> audiences to create their own communities of interest and share
> their Australian stories.[55]

8.56   These benefits aside, SBS's submission identified two potential risks
        associated with faster broadband. Firstly, 'there is a danger that the
        proliferation of new services over the NBN will affect the availability of
        Australian content', primarily due to the lack of local content obligations
        for online content. Secondly, the increased availability of in-language
        overseas content could cause local communities to 'retreat inward',
        increasing the risk of 'digital ghettos' forming for culturally and
        linguistically diverse communities as they have less of an incentive to
        engage with the broader Australian community.[56]

Enabling new methods of community interaction

8.57   The Committee received evidence that the NBN would enable new and
        better opportunities for community groups to engage with their members
        and interact over large geographical distances. NICTA submitted:

> A ubiquitous broadband network goes some way in ensuring that
> [the freedom to choose one's own religion, hobbies and friends] is
> extended to all citizens, and that all citizens can associate with
> groups of their choosing (within reason), no matter where the
> other members of this group might be in the world. The NBN will
> support:
>
> ■ Diversity, by enabling people to connect with others who share
>   the same religions and cultures;
>
> ■ The pursuit of niche interests, hobbies and pastimes by
>   enabling individuals to connect with people around the world
>   who share similar interests; and
>
> ■ The creation of online communities that relate to various niche
>   interests, founded upon the sharing of rich media.[57]

8.58   The Government of South Australia submitted:

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55   SBS, *Submission 170*, p. 2.
56   SBS, *Submission 170*, p. 2.
57   NICTA, *Submission 198*, p. 33.

> The NBN is likely to have a large impact on what we consider to be a 'community' as a wide range of communities will be created online connecting people who are around the corner from each other or around the world. Communities will not only be people who live near each other but also those who have interests in common that connect online. Communities will use a range of online tools which are free to access and often free to use (other than the cost of the internet connection) such as:
>
> - Voice over Internet Protocol (VoIP);
> - video chat and conferencing;
> - free and open source software such as web-based applications, for example Google Apps, Yahoo Mail and MSN Messenger; and
> - social networking to connect, share information, organise events and create communities.[58]

8.59   The Committee heard from community groups that envisaged benefits arising from the NBN. For example, Mr Mark Freeman, President of the Kuranda 8 Ball Association, told the Committee that the NBN would allow the association to conduct its meetings over video-conferences, removing the need to travel long distances and hire facilities.[59] Mr Robert Cook, Secretary of the Melbourne Electric Vehicle Interest Group, described the group's use of a broadband-enabled technology platform called rivusTV to interactively broadcast its meetings to individuals anywhere in Australia.[60] RDA Illawarra submitted that the NBN could enable traditional community groups such as Rotary, Apex and the Red Cross to address their declining membership numbers by allowing people to join groups online and participate remotely.[61]

8.60   The AIIA cited in its submission research from overseas suggesting that members of online communities were more likely to be involved in civic activities since connecting to the internet.[62] A recent survey in the US found that 80 per cent of internet users are involved in some kind of volunteer group or organisation, compared to 56 per cent of non-internet users. Internet users, particularly users of social media, had higher rates of charitable donations, volunteering, meeting and event attendance and leadership roles.[63]

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58   SA Government, *Submission 195*, p. 13.
59   Mr Mark Freeman, *Submission 28*, p. 1.
60   Robert Cook, Alternative Technology Association, *Submission 161*, p. [1].
61   RDA Illawarra, *Submission 90*, p. 4.
62   AIIA, *Submission 184*, p. 23.
63   AIIA, *Submission 184*, p. 24.

8.61   Huawei described 'this new era of online engagement' as a benefit to
        democracy, where 'broadband will allow citizens who were once unable
        to engage with Government to actively participate online …':

> A National Broadband Network will allow Government to re-
> shape itself online as a 'Participative Platform', where the online
> community can offer feedback on anything from potholes in roads,
> to graffiti on local landmarks, to campaigns against new
> developments. And on the other side of the fence, broadband is
> already allowing politicians to all levels to engage with their
> constituents—through mediums like Twitter, logs, YouTube,
> Facebook and more.[64]

Improving work–life balance

8.62   The Committee heard about the NBN's potential to improve the work–life
        balance of Australians by encouraging more flexible work practices such
        as tele-working. Tele-working has been discussed in general terms
        elsewhere in this report; the focus in this section is on particular benefits in
        a social and community context. An Access Economics report into tele-
        working in the context of an NBN identified such benefits as follows:

- personal savings on travel in time and money;

- greater choice in place of residence;

- greater access to family;

- reduced impact on road and public transport infrastructure; and

- potential for greater involvement in their local community by the tele-
  worker.[65]

8.63   Mr Bob Carmichael, Manager of Business and Economic Development at
        the City of Tea Tree Gully, described the benefits of tele-working for the
        environment and productivity:

> If [people] currently have to drive for 45 minutes twice a day, five
> days a week, those are so many more hours they could be working
> from home. They would be more productive and they could be

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64   Huawei, *Submission 105*, p. 13.

65   Access Economics, *Impacts of Teleworking under the NBN*, July 2010; as summarised by DBCDE,
     Submission 215, p. 83.

more flexible. It would be more in keeping with work–life balance if they did not spend so much time commuting.[66]

8.64   DBCDE told the Committee about the particular benefits of broadband for small business owners, indicating evidence to suggest that high-speed broadband will improve daily life, referring to one survey which noted 'a better work–life balance in 82 per cent of small businesses who moved to broadband connections when compared to dial-up connections.'[67]

8.65   The flexibility of employees to 'work anywhere anytime' was identified as one of the key benefits of tele-working. The Department of Innovation, Industry, Science and Research (DIISR) outlined to the Committee the findings of a 2006 internal study conducted by IBM, which assessed the company's workforce mobility policy:

> … over 70 per cent of employees felt that working remotely positively enhanced their work–life balance, improving productivity, morale and motivation. In terms of retention, the flexibility of working from home resulted in a 96 per cent return rate from parental leave.[68]

8.66   David O'Loughlin, Mayor of the City of Prospect, told the Committee that his City has set up wireless 'hotspots' that allow people to work in local cafes rather than travelling to a designated workplace:

> … there is the nice idea that you may be able to build more of a neighbourhood by having people working closer, using that kind of technology. We now have people working in our hotspots. Whilst they are having a coffee they are having a meeting, and they will be using things like iPads. Who knows what is going to come out next year. They are doing commerce whilst having a coffee outside a beautiful cafe under the plane trees. Why wouldn't you do that if you could?[69]

New entertainment possibilities

8.67   While the majority of this report has focused on more practical applications, the Committee also heard that the NBN will enable Australians to take part in new and better forms of electronic

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66   *Committee Hansard*, Adelaide, 4 April 2011, pp. 33–34.
67   DBCDE, *Submission 215*, p. 83.
68   DIISR, *Submission 219*, p. 43.
69   *Committee Hansard*, Adelaide, 4 April 2011, p. 69.

entertainment, including Internet Protocol Television (IPTV), video on demand and online gaming.

8.68   As opposed to traditional broadcast television, IPTV is the name given to video that is streamed to users over their broadband internet connection. Video on demand refers to the ability for users to watch video content at a time of their choosing, unrestricted by schedules.[70] The NBN will increase the availability of broadband speeds that are fast enough to support these technologies.

8.69   Mr David Buckingham, Chief Financial Officer of iiNet, who currently offer their customers IPTV using the company FetchTV, told the Committee that IPTV requires broadband speeds of at least 5 Mbit/s to be acceptable to users.[71] NBN Co's Corporate Plan predicts that IPTV and video on demand will become more widely available in the next one to five years, and will require sustained connections of 10 to 20 Mbit/s to be viable. NBN Co expects that in the longer term, technologies such as 'Ultra High Definition' video will be developed requiring connections of more than 250 Mbit/s.[72]

8.70   Mr John Stanton, Chief Executive Officer of Communications Alliance, told the Committee about some of the potential of IPTV:

> We are not talking about television, we are talking about video. The sorts of changes that intelligent IPTV can and will make to the viewing experience and the way that we can use video in our homes will drive a lot of economic activity, a lot of take-up and use a lot of bandwidth going forward. I have seen demonstrations in Asia of the way that intelligent IPTV systems, even in their first generation, can scour the world for video content that they know their owner likes, can edit it and present it in ways that create a much different viewing experience than we are able to see today.[73]

8.71   The NBN is also likely to support enhanced online gaming and game development. The IT Industry Innovation Council submitted that the NBN will support the competitiveness of the Australian game development industry, which currently exports almost 100 per cent of its product, and works with publishing partners in the US, Europe and Asia:

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70   NBN Co, *Corporate Plan 2011–13*, pp. 155, 159.
71   *Committee Hansard*, Perth, 5 May 2011, p. 7.
72   NBN Co, *Corporate Plan 2011–13*, p. 39.
73   *Committee Hansard*, Sydney, 29 April 2011, p. 35.

> … Companies that are doing well in Australia are those that, having recognised the shift away from packaged titles/retail models to downloadable digital games, have adjusted their business model and investments accordingly … With high speed complex games requiring a high speed broadband network, this industry sector can only benefit further from the NBN as the preferred delivery model for online interactive gaming.[74]

8.72   The Committee received evidence that an advantage of the expansion of the computer gaming industry is that many of the new technologies it develops can also be adapted for more practical purposes. Games and their technologies are increasingly being used as tools for education and rehabilitation, as described in Chapters 3 and 4. DIISR told the Committee that games technology is also being used to develop training activities for the defence sector.[75]

8.73   Ms Veronica Maxville, an ICT industry professional, told the Committee that the games industry has a lot to offer other sectors in terms of the useability and durability of its products:

> In terms of software development, our software at the moment is quite often not very easy to use. One of my beliefs is that games technology is somewhere that we can look at for how we should be developing software and the equipment that we are using. If you have DS or Wii or any of those games consoles, they do not break, they do not get a 'blue screen of death' … It does not need a manual, kids can play it before they can read, and it does not break. All you have to do is reboot. That is so different from your Windows machine that is going to get a virus on it if you do not have all your protections up within 30 seconds of connecting to the internet.[76]

Better access to arts and culture

8.74   The Australia Council for the Arts told the Committee that broadband technology would have 'transformative effects on the creation and consumption of arts':

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74   ITIIC, *Submission 111*, p. 8.

75   Mrs Judith Zielke, Head, Enterprise Connect Division, DIISR, *Committee Hansard*, Canberra, 6 July 2011, p. 10.

76   Ms Veronica Maxville, *Committee Hansard*, Perth, 5 May 2011, p. 33.

> The NBN … will allow anytime, anywhere access to creative and
> cultural content. It will make possible entirely new forms of
> connection between arts producers and audiences, and strengthen
> networks connecting artistic talent, skills and resources
> throughout the sector. Most artists and arts organisations are small
> to medium-sized businesses and the NBN will make it easier for
> them to connect and collaborate with each other. The NBN has the
> potential to move us towards a more level playing field for the
> creation and consumption of the arts between regional and
> metropolitan areas, reducing the tyranny of distance. Further, the
> NBN will catalyse new forms of connection between organisations
> in Australia and internationally, making it easier for Australian
> artists to take their art to the rest of the world.[77]

8.75   The Council also submitted that broadband enables artists to increasingly
        use new interactive digital technologies and business models:

> Artists are creating work that invites audiences to move beyond
> passively viewing, watching or listening to arts content, and
> instead encourages them to try stepping inside artwork,
> contributing to its creation— and in some cases even wearing the
> artwork. Arts content in digital formats can be copied, shared and
> repurposed. While encouraging creative interactions, this is
> creating challenges for those seeking to protect and monetise
> content, and is transforming traditional business models (which
> were based on one-off pieces and events). Digital distribution and
> consumption of arts content opens up new ways of doing business
> and earning income (such as increasing royalties through posting
> online back catalogues).[78]

8.76   The Council noted that the NBN could dramatically improve access to the
        arts in regional areas:

> For regional consumers, the NBN will have positive outcomes for
> regional populations by providing greater access to arts content
> created locally or anywhere on the planet. And the NBN will
> support regional and rural arts and culture organisations and
> creative industries, as well as individual artists and practitioners,
> connecting networks of artworkers to each other and to new
> markets.[79]

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77   Australia Council for the Arts, *Submission 232*, pp. 5, 7.
78   Australia Council for the Arts, *Submission 232*, p. 8.
79   Australia Council for the Arts, *Submission 232*, p. 8.

8.77   A number of other submitters shared this view. For example, the
        Government of South Australia told the Committee that NBN-facilitated
        access to the arts in regional communities will 'enhance the quality of life
        and richness of local communities':

> Regional communities do not have access to the same arts/cultural
> experiences as those in Adelaide do, but have many grass-roots
> interests and capabilities. Local arts interests are the life blood for
> most regional communities. An enhanced digital environment
> provided by the NBN will offer the following benefits:
>
> - a new, accessible medium for creating arts;
> - a new medium for people to connect and contribute (for
>   example, the success of Eric Whitacre's virtual choir, viewable
>   on YouTube; virtual orchestras, bands and other virtual
>   productions; or uploading photographs to Google Maps or
>   Photosynth);
> - access to special arts experiences (for example, virtual tours of
>   galleries and digital recordings of events).[80]

8.78   The Music Council of Australia told the Committee that the NBN could
        enable the online broadcast of live or recorded performances, including
        rarely available musical works.[81] Ms Suzie Hazelhurst, Chairwoman of
        Country Arts WA, recently wrote:

> The roll-out of the National Broadband Network is an important
> development for regional communities. Access to a Perth
> performance of the Berlin Philharmonic Orchestra or Black Swan
> Theatre's A Midsummer Night's Dream was once an impossibility
> for the average person living far from our capital city. The NBN
> will put these experiences within the reach of the majority of the
> one in three West Australians living in the bush.[82]

8.79   The Committee also heard that the NBN could improve the accessibility of
        Australia's museum collections. The Council of Australasian Museum
        Directors informed the Committee that most major museums have
        developed online digital services, as less than three per cent of their
        collections is able to be exhibited at any one time. The NBN will enhance
        these services:

> The NBN holds the potential to dramatically increase the ability of
> these online programs to reach and engage new audiences … For

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80   SA Government, *Submission 195*, p. 13.
81   Music Council of Australia, *Supplementary Submission 148.1*, p. 11.
82   Susie Hazelhurst, 'Arts vital to bush health', *West Australian*, 13 July 2011, p. 2 Supplement.

the first time since the advent of public internet services, it will be possible to engage and connect all Australians through rich media content and interactive, participative experiences. The social, educational and economic benefits of government investment in museum services will be significantly enhanced as museum collections and expertise are made available in new, responsive ways, unencumbered by the constraints of bandwidth and geography.[83]

8.80   Museums Australia told the Committee that the NBN could enable larger institutions to professionally support smaller regional museums, and that further to this:

> … greater access to broadband and greater take-up of digital services can broaden the reach of community museum and community history projects—which are vital in support of tourism nationally. Comparable increased support for Indigenous Keeping Places, cultural centres, and their communities must also be profiled as an important social and cultural policy goal. The benefits of greater sharing of cultural heritage knowledge are twofold at the regional level: better support of smaller collecting organisations enriches the volunteering experience for those who are caring for smaller collections … meanwhile, culturally active communities are healthier communities …[84]

8.81   Other submitters also drew the link between the arts and the health of communities. RDA Northern Rivers submitted:

> [The Arts] has an important role in facilitating social cohesion and providing a forum and framework for … celebration and expression in individual and community identity and aspiration.

> The provision of access to high speed broadband will enable a greater degree of engagement and connectivity across the region. Many people in regional areas are isolated and as a result not as aware of opportunities and information that is vital to their own, their family's and their community's development, and their ability to participate and contribute is consequently affected.[85]

83   Council of Australasian Museum Directors, *Submission 168*, p. 3.
84   Museums Australia, *Submission 162*, p. 8.
85   RDA Northern Rivers, *Submission 55*, p. 14.

Better access to information and digital media

8.82   The Committee acknowledges DBCDE's claim that:

> High-speed broadband lowers the cost of searching for and
> finding information, primarily in terms of the user's time, and may
> also provide users with access to lower priced services. [86]

8.83   The Committee also acknowledges the views expressed by DBCDE about
the benefits of digital engagement for Australian consumers. These
benefits may include:

- enhanced communication through email, instant messaging,
  VoIP and other services;
- time saving activities including telecommuting, online
  shopping, remote work and study opportunities, information
  gathering and accessing services;
- price/product discovery;
- education and knowledge;
- access to new online services such as social networking,
  media/entertainment and professional services;
- substitution of physical services to services delivered
  electronically; and
- engagement in the online community.[87]

8.84   As an example of the new types of information that could become
publically available, Gold Coast City Council told the Committee that the
NBN could enable it to interconnect all its Surf Lifesaving facilities and
services, enabling them to share with the public live video of beach
conditions, sporting events, and education and training sessions.[88]

8.85   NICTA told the Committee about the NBN's potential to facilitate
'hyperlocal' media:

> [The] NBN will enable people to create, contribute and share as
> easily as they can consume … Symmetric high-speed broadband
> will enable and encourage:
>
> - User-generated content creation and dissemination;
> - The collection and dissemination of environmental and other
>   data by 'citizen scientists' …
> - Citizen journalism;

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86   DBCDE, *Submission 215*, p. 82.
87   DBCDE, *Submission 215*, p. 82.
88   Gold Coast City Council, *Submission 71*, p. 7.

■ Diversified local news sources;

> When it is possible for anyone with a laptop and camera or even
> just a smart phone to capture events as they unfold in their home
> towns, you have the beginnings of hyperlocal news publishing for
> and by the citizens: citizen journalism. But this also requires that
> would-be news reporters have the means to upload their stories,
> complete with rich video content, to the online news service, a
> scenario made possible only by adequate broadband networks.
> The NBN has the potential to catalyse this nascent activity.[89]

8.86   The NBN will also enable libraries to greatly expand their online services.
For example, Eastern Regional Libraries Corporation (ERLC) submitted
that the NBN would allow:

> … more of our communities to access our online 24/7 services
> through improved internet access. ERLC has over 780,000 visits
> per annum to its website (www.yourlibrary.com.au) by people
> wanting access to all kinds of information, including authoritative
> databases and our catalogue where they can reserve any item in
> the collection. The rollout of [the] NBN to all our communities
> would undoubtedly lead to further growth in our 24/7 services …

> NBN will reinforce ERLC's use of technologies and support its
> own rollout in downloadable materials (e-books, music and video)
> and in the social networking arena through Facebook and
> Twitter.[90]

8.87   Mr Carmichael of the City of Tea Tree Gully told the Committee:

> Access to the National Broadband Network would also enable us
> to improve our digital literacy training and improve our social and
> information services to all of our residents, including students. We
> are also keen to be able to use the National Broadband Network to
> develop an e-book service as a new digital service for our 37 157
> active library members.[91]

8.88   National and State Libraries Australasia (NSLA) told the Committee that
the collections of the ten major publicly-funded research libraries of
Australia and New Zealand are 'irreplaceable assets' with a current value
of more than $5 billion.[92] NSLA added:

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89   NICTA, *Submission 198*, p. 33.
90   ERLC, *Submission 221*, p. [2].
91   *Committee Hansard*, Adelaide, 4 April 2011, p. 27.
92   NSLA, *Submission 53*, p. 1.

> All information is now expected to be online … The NBN will
> enable the community to use, adapt, create and transform our
> collections as they become available in digital form and more
> readily access the global information network. File sizes are
> increasing as film, oral history, research data sets, archival
> collections and high quality images are digitised and made
> available online. The NBN will have the capacity to carry this
> content to all Australians.[93]

8.89   However, NSLA submitted that government support will be required
        during the NBN rollout to digitise more Australian content and make it
        available online. It told the Committee about research that has found that
        for every one dollar invested in digitisation, over twenty dollars of
        economic benefit is returned,[94] and that 'digitisation makes information
        discoverable by everyone and gives access to those residing in regional,
        rural and remote areas who cannot access physical libraries'.[95] NSLA
        warned that:

> Australia lags many other countries in directing extensive public
> funding to mass digitisation and the pressure to address this is
> growing. Failing to digitise will result in a much-reduced
> Australian cultural presence on the web. For the community,
> finding Australian content via the NBN will be critical to its use
> and reputation.
>
> Along with the digitisation of our collections, a central and inter-
> linked challenge for libraries is the long-term preservation of
> digital assets whether born-digital or digitised from another
> format. The processes to digitise are tested and robust and all that
> is required to gear up to mass digitisation is funding.[96]

8.90   The Committee heard that while the NBN is 'critical infrastructure' for
        Australians to access digital collections,[97] the National Library of Australia
        (NLA) explained that to date, less than four per cent of the its collection is
        digitised, and there is a 'pressing need' for national funds to expand the
        digitisation effort.[98] The NLA described its free online service, *Trove*,
        which 'allows the public, and researchers, to [find and] annotate collection

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93   NSLA, *Submission 53*, p. 1.
94   NSLA, *Submission 53*, p. 2. The NSLA submission refers to a 2008 Access Economics report.
95   NSLA, *Submission 53*, p. 1.
96   NSLA, *Submission 53*, p. 2.
97   NSLA, *Submission 53*, p. 2, and NLA, *Submission 106*, p. 2.
98   NLA, *Submission 106*, p. 2.

items held by more than 1000 Australian libraries, a wide range of other
collecting institutions, and major digitised book, journal and newspaper
collections'.[99]

Box 8.2   Virtual Museum of the Pacific (VMP) Project

The Australian Museum is reconnecting communities from the Pacific with
intangible and material heritage lost in the colonial period.

The Virtual Museum of the Pacific (VMP) project includes digitising cultural
objects, bringing culturally knowledgeable members from communities to
annotate the information linked with the collections, establishing field
programs where communities can digitally document and preserve their own
intangible heritage and, more recently, working to provide a web tool which
allows easy, intuitive searching for related objects by type and creator
community.

The project maximises the value of new and existing metadata, publishes the
museum's content to the web without expensive, hard-wired programming
and promotes forms of cultural revitalisation which underpin community
coherence and national stability.

The Council of Australasian Museum Directors argues that the high speed
connectivity offered by the NBN will both feed and harness projects such as
the VMP.

Source: Council of Australasian Museum Directors, *Submission 168*, p. 12.

8.91   Museums Australia highlighted the contribution that digitised content can
         make to enriching the public's awareness and understanding of
         Australia's culture and heritage:

> The story of Ned Kelly; the discovery of gold; the experience of
> drought, flooding and bushfires; immigration's contribution to
> development; the national and local experiences of war: all these
> themes would lead audiences and researchers to many different
> types of institutions holding material that illuminate them. Greater
> digitisation and access to digital initiatives, as spurred by the
> NBN's roll-out, would enrich our knowledge and the value of
> significant objects in collections, by making related objects and
> records held in different institutions more discoverable. The NBN

99   NLA, *Submission 106*, p. 5.

provides the opportunity for the museums sector to build improved digital links, both for researchers and the public's enrichment. This could stimulate better sharing of information, research opportunities and enhanced understanding of those collections by the inheritors of the legacy of our nation's achievements collectively.[100]

Crime and safety considerations

8.92   The Committee received evidence that the NBN presents both opportunities and risks in the areas of crime and safety.

8.93   NICTA argued in its submission that safety and security could 'benefit heavily' from the NBN's rollout. The opportunities will include:

- Outsourcing of the monitoring of council public safety cameras to centralised, dedicated facilities, reducing costs;
- Remote monitoring of a home by the homeowner or someone trusted by the homeowner, like a friend, family member or specialist home security firm; and
- Remote access control, whereby the homeowner can remotely allow or disallow access to their home by tradespeople or delivery people.[101]

8.94   As an example of security management by councils, NICTA submitted:

Ipswich City Council has established itself as a world leader in public safety surveillance monitoring with its Safe City program. Several regional councils in Queensland and interstate are considering outsourcing the monitoring of their own surveillance cameras to Ipswich City Council's monitoring facility. The NBN can simplify and greatly reduce the cost of these kinds of inter-council collaborations …. NICTA is working with the Ipswich City Council to automate some monitoring tasks, such as detecting road rage or dangerous driving behaviour on highways …[102]

8.95   With regards to home security systems, NICTA submitted:

… the NBN brings greater opportunities for homeowners to remotely monitor their homes, and for security companies to offer smarter home monitoring solutions. While some home security

100 Museums Australia, *Submission 162*, p. 7.
101 NICTA *Submission* 198, p. 32.
102 NICTA *Submission* 198, p. 32.

firms already use the Internet to enable 'back-to-base' monitoring, these solutions do not collect and transmit rich data of the kind that might be usable in a prosecution. Low bandwidths also inhibit the ability for homeowners to conduct their own remote video surveillance of their residences, and curtail the growth of certain 'smart home' applications.[103]

8.96   Mr Nicholls of Curtin University told the Committee about an 'intelligent' security system installed in a project at the Institute for Microprocessor Control, using around 100 video cameras in fixed locations:

> The video footage has algorithms run over it and it is trained to understand what normal behaviour is. When it sees an anomaly it detects that and it captures that bit of footage and will send it to a central observation point. So, instead of securing people and having to manage and watch banks of video footage or not capture what is happening, they will actually have the car accident or the physical assault that is occurring. That is an application that would be better enabled by broadband technologies.[104]

8.97   However, the Committee also heard from some submitters that the NBN would increase the threats of cyber-crime. Senetas, a data security company, submitted to the inquiry:

> As a high speed, high bandwidth, globally-connected information conduit, the NBN leaves Australia's individuals and businesses open to the growing international threat posed by cybercriminals. Without a properly designed security focus, deployed through dedicated encryption hardware, communications from and to governments, enterprises, small businesses, researchers/innovators and individuals poses a significant risk.[105]

8.98   The Alannah and Madeline Foundation submitted that there are a range of safety risks associated with online digital technologies, including:

- abuse of children online (cyber-bullying, cyber-stalking and sexual grooming);
- exposure to illegal and inappropriate content;
- inappropriate social and health behaviours in an online environment (e.g. technology addiction, online promotion of anorexia, drug usage, underage drinking and smoking);

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103 NICTA *Submission* 198, p. 32.
104 *Committee Hansard*, Perth, 5 May 2011, p. 23.
105 Senetas, *Submission 1*, p. [1].

■ identity theft; and breaches of privacy.[106]

8.99   The Foundation's General Manager of Cybersafety, Ms Jacqueline Van
        Vugt, recognised the enormous potential benefits of broadband access, but
        also recommended that governments be aware of any negative impacts,
        and have strategies in place 'to contain and reduce those risks':

> It is our position that, just as with the building of roads, when we
> come to the information superhighway the Government, through
> NBN Co, also needs to be mindful of what some of the risk
> mitigation strategies would be and to think about what a
> sustained, coordinated and really comprehensive behaviour and
> social change approach might bring in order to be able to contain
> those risks.[107]

8.100   The Committee also received submissions from organisations concerned
        about the increased potential for copyright theft under the NBN.[108] These
        organisations each recognised and welcomed the potential of the NBN to
        expand the digital economy, but warned that without a framework in
        place to protect online copyright there will be serious threats to the level of
        innovation and investment in quality Australian online content.

8.101   The Australian Content Industry Group (ACIG), which represents several
        other content industry organisations, told the Committee that its preferred
        solution would be an 'industry led solution in the form of a code agreed
        between content rights holders (and their representatives) and ISPs'. ACIG
        submitted that it:

> … has asked the Government to facilitate an industry roundtable
> that would bring together representatives of the key content
> industries and internet service providers (ISPs) to start the process
> of drawing up an industry code of conduct to address the ongoing
> issue of copyright theft online. This Code would not only deal
> with illegal file-sharing, but contemplate other forms of
> infringement on the internet (either presently or in the future).[109]

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106 The Alannah and Madeline Foundation, *Submission 206*, p. 7.

107 *Committee Hansard*, Melbourne, 18 March 2011, p. 70.

108 Copyright Agency Limited, *Submission 92*; The Australian Content Industry Group, *Submission
     108*; Australian Recording Industry Association, *Submission 112*; Australian Publishers
     Association, *Submission 136*.

109 ACIG, *Submission 108*, p. [2].

Committee conclusions

8.102   As discussed throughout this report, the NBN has the potential to provide an enormous range of benefits to Australians and their communities. From a social and community perspective, the NBN could reduce social isolation, enable new forms of community interaction, improve the work–life balance of employers and employees, enable new entertainment options, improve access to arts and culture, and improve access to information.

8.103   For these benefits to be realised there is a need to ensure that as many Australians are connected to the network as possible. The Committee heard that, due to the 'digital divide', many of the Australians who could benefit the most from broadband currently have the lowest levels of online participation. Groups that have particularly low broadband usage rates include those in rural and remote areas, Indigenous Australians, the elderly, people with disabilities, and people from culturally and linguistically diverse backgrounds. The extent of accompanying measures implemented by governments will determine whether the NBN narrows or widens this digital divide. Education and affordability of access are two key areas that will need to be addressed.

8.104   The Broadband for Seniors program is an example of a successful government program that has delivered training to over 94 000 seniors in free broadband kiosks around Australia, resulting in real and measurable improvements to the online participation of those involved. The Committee welcomes the Federal Government's recent decision to extend funding for Broadband for Seniors for another four years. Similar targeted programs may be required to ensure maximum NBN uptake amongst other disadvantaged groups, particularly Indigenous Australians in remote communities and people with disabilities. A variety of possible strategies for maximising the uptake of the NBN across Australia will be discussed in Chapter 11.

8.105   The Committee also heard concerns that people living in small communities in rural and remote Australia could miss out on many of the benefits of broadband if they are not connected to the NBN's fibre network. While these concerns are valid, the Committee recognises the practicalities and cost of delivering fixed line services in remote areas. These issues are explored in Chapter 6 on economic development, Chapter 9 on network capacity and technology, and Chapter 11 on encouraging uptake.

8.106   There are substantial benefits that would result from expanding the
         digitisation of the nationally significant cultural and historical collections
         held by Australian museums, libraries and other institutions. An
         adequately resourced strategy will be required in order to increase the
         public accessibility and ensure the future preservation of these collections.

8.107   The Committee also recognises the large social and economic benefits of
         the NBN could be partially offset by the threat of by cyber-crime,
         including copyright theft and cyber-bullying. Given the work done in
         previous inquiries by this Committee and others, including the report
         tabled in June by the Joint Select Committee on Cyber-safety and the
         ongoing work of that Committee, the Committee does not propose to
         address the concerns raised by submitters in detail. However, the
         Committee does recognise the importance of these issues and the need for
         a coordinated government response. It looks forward to the Federal
         Government's upcoming white paper on cyber-crime, which is expected to
         be released in the first half of 2012.