4

Access to Broadband Services in Regional and Remote Areas

Background

4.1 In its Concluding Comments in Chapter 2 of the First Report, the committee noted that improvement of information communication technology was important for economic productivity and growth in Australia. This is particularly the case for remote and regional areas where service delivery and commercial opportunities are often limited.[1]

4.2 The First Report also included references to:

- Access to Government services in regional and remote Australia
- Health
- Education
- In the longer term, economic development, growth and the vitality of local economies.

4.3 The committee recommended that the NBN Co Limited (NBN Co):

- Publish timeframes for the rollout of National Broadband Network (NBN) services to regional and remote areas and communicate these to the areas to which they apply.
- Investigate the impact of transition to the NBN on currently available levels of service for satellite technology.

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1 Joint Committee on the National Broadband Network, First Report, August 2011, *Review of the Rollout of the National Broadband Network* (JCNBN), p. 54.

- Taking into consideration findings of the committee's investigation, formulate contingency plans against potential reduction of capacity in regional and remote areas as a consequence of the NBN rollout, if required.[2]

4.4 In addition to further discussion on these matters, the following related issues will be considered in this chapter:

- NBN Co's consultation with communities in regional and remote Australia, and
- Government readiness for the NBN.

4.5 Access to the NBN in regional and remote Australia will be explored by outlining, by way of example:

- the views of Ninti One, an organisation based in Alice Springs;[3]
- what the NBN will provide for Central Australia and for Julia Creek in Queensland, and
- what the NBN might mean for the Broken Hill region, particularly in e-health and education.

Current Broadband Access

Ninti One Ltd

4.6 Evidence from Ninti One Ltd set out many of the problems facing people, especially Aboriginal people, in remote and regional places.[4]

4.7 Ninti One drew attention to the fact that, in the Northern Territory (NT), 'very few communities outside the growth towns have any access at all' to the Internet. This has the effect of severely limiting the capacity to improve health in remote areas because higher bandwidths are required to use tele-conference facilities. Ninti One stated that it was dealing with

2 JCNBN, p. 57.

3 Ninti One Ltd is a not-for-profit company, with headquarters in Alice Springs, working towards eliminating economic disadvantage in remote Australia. It works in the arts, tourism and pastoral industries to provide the knowledge base for the benefit of Australians living in remote areas.

4 Ms Jan Ferguson, Managing Director, Ninti One, Transcript of Evidence, Broken Hill, 27 July 2011, p. 1; Ninti One, *Submission 16*, p. 1. See JCNBN, pp. 47-48, for issues raised by Ninti One.

'abject poverty'. To change this, and increase access to markets and services, high speed, low cost Internet facilities are required.[5]

4.8 There are significant limitations to communications for small communities, despite provisions in the Universal Service Obligation (USO) for telephony and Internet access subsidies. There are also government programs in place to provide Internet access and training to remote Aboriginal and Torres Strait Islander communities. Ninti One noted that, while Internet access and speed are issues for remote Australia, so are:

- Access to basic telephony services, including mobile phones.
- Access to installation and maintenance services.
- High costs of Internet access.
- Access to training to improve digital literacy.[6]

4.9 In 2008, in partnership with the University of Wollongong, Ninti One developed a number of wireless mesh networking prototypes for communications in remote and regional areas, as well as applications to configure the mesh devices. Compatible with satellite technology, these mesh devices would have distributed the Internet at community level. Made with readily available components, the commercial cost would have been $1000 per unit. At that time, telecommunication providers did not express any interest in this technology because investors were not interested in it.[7]

4.10 Ninti One noted that, while 93 per cent of Australia will have access to speeds of up to 100 megabits per second (Mbps) via fibre, remote Australia will receive speeds of up to 12 Mbps via wireless and satellite solutions. Ninti One believed that this will only provide minimal improvement to the availability of higher bandwidths, and would be unsatisfactory for use in video and multimedia applications. In turn, this could effectively limit opportunities for economic and social development in the arts, tourism and environment sectors.[8]

4.11 Ninti One was concerned that remote Australia was unlikely to experience the obvious social, educational and economic benefits of Internet

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5 Ms Ferguson, Ninti One, Transcript of Evidence, Broken Hill, 27 July 2011, pp. 2, 3.

6 Ninti One, *Submission 16*, p. 3.

7 Ninti One, *Submission 16*, p. 7. Ms Ferguson, Transcript of Evidence, Broken Hill, 27 July 2011, pp. 2-3.

8 Ninti One, *Submission 16*, p. 5. See NBN Co, *Corporate Plan 2011-2013*, p. 93.

connectivity if some key issues were not addressed in planning for the NBN.[9]

4.12 Ninti One therefore recommended that the Government and NBN Co should explore all possibilities to provide connectivity to remote Australia, by:

- Exploring alternative technologies to provide information communication technology (ICT) solutions for remote settlements.
- Commissioning a report to establish a program to serve remote Australia to assist with the implementation of cost-effective ICT solutions.
- Including provisions for Internet access in Government assistance programs for shared community Wi-Fi networks, community-level account holders and billing options.
- Providing additional funding for ICT training for Aboriginal and Torres Strait Islander communities.[10]

Satellite Services

Interim Satellite Services

4.13 NBN Co's Interim Satellite Service (ISS) was launched on 1 July 2011 using existing commercially available, but limited, KU Band satellite capacity and current ground equipment technology. The ISS covers 100 per cent of the Australian land mass.[11] Under the ISS, the satellite equipment and installation will be provided by NBN Co, at no cost to the end-user for a standard installation.[12] These services are available to consumers through NBN Co's Satellite First Release contracts with Optus and IPStar, agreements finalised on 6 May 2011.[13]

9 Ninti One, *Submission 16*, p. 3. Ms Ferguson, Transcript of Evidence, Broken Hill, 27 July 2011, p. 4.

10 Ninti One, *Submission 16*, p. 8.

11 NBN Co, *Submission 2.5* p. 12.

12 Shareholder Ministers (Senator the Hon Penny Wong and Senator the Hon Stephen Conroy), *Submission 19*, p. 6.

13 Shareholder Ministers, *Submission 19*, p. 6.

4.14 The ISS aims to offer retail service providers a wholesale broadband service designed for peak access speeds of 6Mbps downlink and 1Mbps uplink.

4.15 The Department of Broadband, Communications and the Digital Economy (DBCDE) stated that these services exceed the quality of the product that the Australian Government offered under the Australian Broadband Guarantee.[14] The NBN Co Corporate plan forecasts 33 000 connected end users in the first two years of the launch with approximately 250 000 eligible end users based on current eligibility criteria.[15] The NBN Co stated that over 800 users are accessing the ISS, with positive reports being received.[16]

4.16 Additional capacity, a wider range of plans and more service providers are expected to be available through the ISS after its development and promotion phase ends in November 2011. The ISS is scheduled to run until 2015, when NBN Co plans to launch two of its own high-capacity satellites to provide a Long Term Satellite Service (LTSS). The LTSS will aim to offer retail service providers a wholesale broadband service, which is designed for peak download access speeds of 12Mbps.[17]

Long Term Satellite Services

4.17 The Long Term Satellite Service (LTSS) will include features such as increased capacity and return path speeds that are expected to support large file transfers and real time video communications. E-health and e-learning applications, such as interactive distance learning multicast applications will be supported over the LTSS.[18] NBN Co has confirmed that multicast services and commercial grade services will also be available:

> Just to put the committee's mind at rest, [the LTSS] is a very capable service. These are satellites ... that can do videoconferencing and multicast so it is a full-functional service.[19]

14 Mr Peter Harris, Secretary, Department of Broadband, Communications and the Digital Economy (DBCDE), Transcript of Evidence, Sydney, 24 October 2011, p. 9.

15 NBN Co, *Submission 2.5*, p. 12.

16 Mr Mike Quigley, Chief Executive Officer, NBN Co, Transcript of Evidence, Canberra, 13 October 2011, p. 2.

17 NBN Co, *NBN Co launches Interim Satellite Service for rural and remote Australians*, Media Release 1 July 2011.

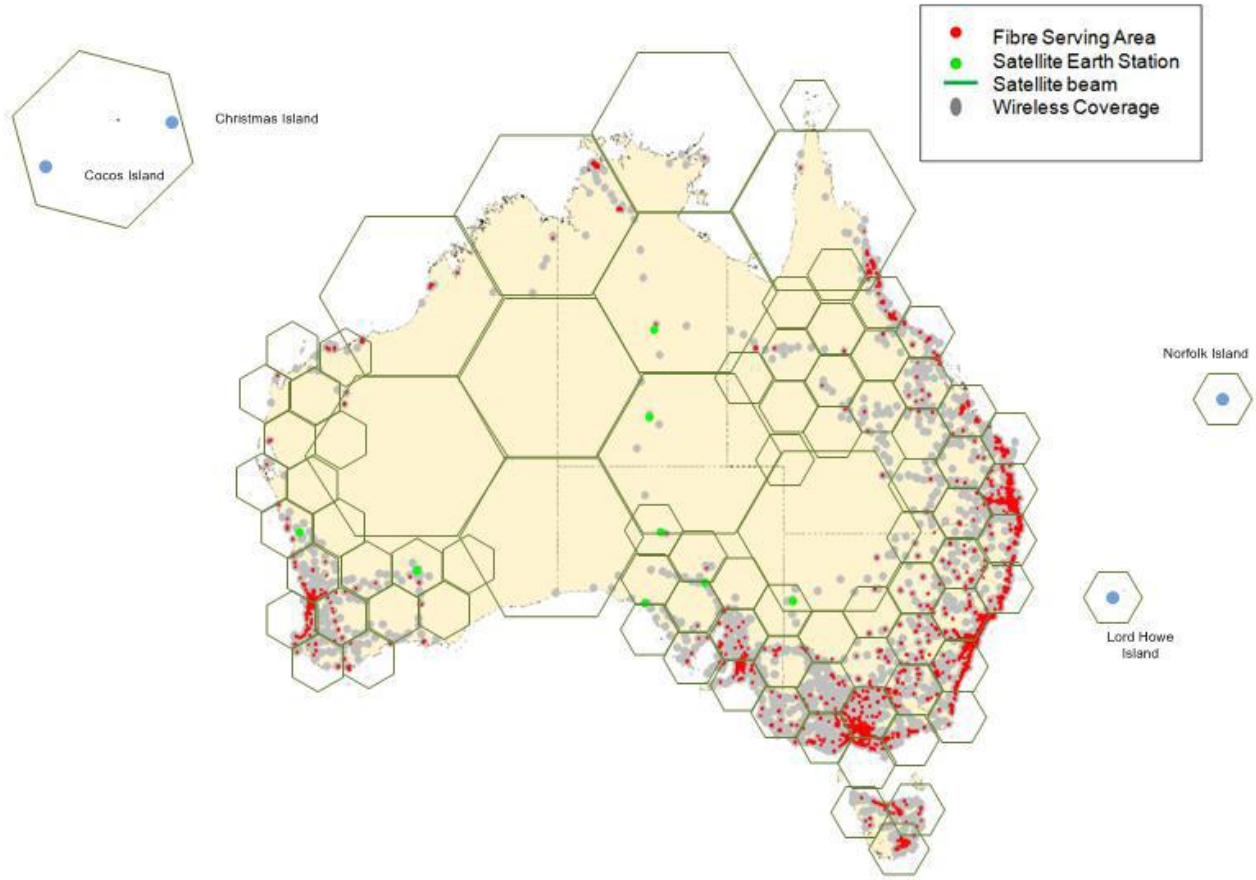
18 Department of Broadband, Communications and the Digital Economy, *Submission 3.3*, p. 10.

19 Mr Quigley, NBN Co, Transcript of Evidence, Canberra, 20 September 2011, p. 4.

4.18 The NBN Co began the tender process for the space segment of the LTSS on 6 September 2011, with the ground segment tender process commencing 'fairly soon'.[20]

4.19 An illustrative spot beam coverage map provided in Figure 4.1 shows the projected satellite spot beams that match the projected take up distribution. Importantly, no single national beam is planned.

Figure 4.1 Illustrative Satellite Footprint



Source NBN Co, Product Overview – Satellite Access Services, *August 2010, p. 16.*

4.20 Some regional and remote communities expressed scepticism about the delivery and success of promised services.[21] The Mayor of Central Darling Shire, Mr Paul Brown commented that:

> As part of the communications network, we now have fibre cables running past most of our townships. If they are or are not

20 Mr Quigley, NBN Co, Transcript of Evidence, Canberra, 20 September 2011, p. 2.

21 Mayor Paul Brown, Central Darling Shire Council, Transcript of Evidence, Broken Hill, 27 July 2011, p. 17.

> connected to fibre, how will they get greatly improved satellite services when the ones who have been promised already are not operating in many cases?[22]

4.21 To address such concerns, NBN Co held various information sessions in communities identified for the NBN rollout over a twelve month period. However, Mr Mike Quigley, Chief Executive Officer (CEO) of NBN Co expressed reluctance for NBN Co to provide satellite communities with advice on the costs associated with wireless or fibre connections:

> The difficulty we have is that we are getting many requests from people in a satellite footprint asking what it would cost for wireless or fibre instead and from people in a wireless footprint asking what it would cost for fibre. These are not easy exercises to do, and they are all what-if questions. Each time we answer them we take up the resources of a company that is not getting on with planning the actual rollout. That is the difficulty we have. [23]

4.22 Despite providing some material to the committee about the extension of the NBN to Julia Creek in Queensland in September 2011, Mr Quigley also expressed concerns about providing advice of this kind to the committee in the future. Issues involved in extending the NBN will be addressed later in this chapter.[24]

4.23 Similarly, NBN Co advised that it could not make a decision about using the Central Australian backbone cable running from Western Australia to the east coast to service remote communities with a wireless network as opposed to the identified satellite service. The NBN Co stated, the decision to extend wireless services of this kind 'would be one for the government ... given the likely significant additional investment required to do so'.[25] NBN Co stated that the cost in resources

> ...to examine this technical option would involve a substantial diversion of resources for the company and NBN Co would need to be directed by government to look at this option as it is a policy decision.[26]

4.24 Further, Mr Michael Wilson, of M&S Consultants, commented that the long term satellite's KA bandwidth (in contrast to the current KU

22 Mayor Brown, Central Darling Shire Council, Transcript of Evidence, Broken Hill, 27 July 2011, p. 18.

23 Mr Quigley, NBN Co, Transcript of Evidence, Canberra, 13 October 2011, p. 18.

24 NBN Co, *Submission 2.3*.

25 NBN Co, *Submission 2.5*, p. 23.

26 NBN Co, *Submission 2.5*, p. 23.

bandwidth) suffers from 'rain fade'. The KA bandwidth is not therefore recommended for humid regions because it cannot penetrate areas of high precipitation.[27] Responding to a question about current bandwidth concerns, NBN Co stated that:

> Given NBN Co intends to launch two KA Band satellites to provide NBN wholesale broadband services, current constraints on bandwidth are not relevant.[28]

4.25 Additional issues relating to the provision of satellite services will be addressed below.

Access to Government Services

4.26 In June 2009, Senator the Hon Stephen Conroy, the Minister for Broadband, Communications and the Digital Economy (the Minister), announced a competitive tender process for the $60 million Digital Regions Initiative. This program aimed to provide the benefits of digital education, health and emergency services in regional and remote Australia. The Minister announced that:

> The National Broadband Network will deliver high-speed broadband to all Australians, no matter where they choose to live or work and the Digital Regions Initiative will drive important developments to enable the productive benefits on offer.[29]

4.27 Examples of possible initiatives included, but were not limited to:

- Remote medical consultation, diagnosis and treatment to address regional skills shortages and enhance patient care.
- Digital resources and services such as teleconferencing to improve access to educational opportunities for regional, rural and remote students and teachers.

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27 Mr Michael Wilson, Director, M&S Consultants Pty Ltd, Transcript of Evidence, Broken Hill, 27 July 2011, p. 12.

28 NBN Co, *Submission 2.4*.

29 Senator the Hon Stephen Conroy, Minister for Broadband, Communications and the Digital Economy, '$60 million to drive digital services for regional, rural and remote Australia', *Media Release*, 15 June 2009.

- Digital technologies to improve emergency and disaster response.[30]

4.28 Addressing the IBM Smart Government conference, the Minister stated that, as the NBN was rolled out:

> ...it will allow new and innovative Government service delivery models, reducing costs and increasing consumer satisfaction. Over time, clients in both metropolitan and regional areas will be able to obtain services online instead of travelling to a Government shopfront. By helping people transact with government online, frontline service delivery workers will have more time and resources for tailored and face-to-face services for those who need special assistance. It will free up staff, while allowing clients to choose when and how they interact, in turn freeing them from the constraints of physically attending appointments. This will save them time, money and stress.[31]

4.29 In the *National Digital Economy Strategy*, the DBCDE stated that:

> Effective participation in the digital economy by Government can reduce costs, increase customer satisfaction and promote innovation. Encouraging people to access Government services online, and making it easier for them to do so, increases people's digital confidence and digital literacy. This makes it easier for Government to facilitate online engagement and collaboration with citizens to improve service delivery or provide input into policy and regulatory matters.[32]

4.30 In July 2011, the Minister announced that the 2011-12 Regional Telecommunications Review (the Review) would examine 'telecommunication services in regional, rural and remote parts of Australia'. The Review will pay particular regard to 'initiatives that will enable regional communities to participate in, and realise the opportunities of, the digital economy.'[33]

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30 Senator the Hon Stephen Conroy, Minister for Broadband, Communications and the Digital Economy, '$60 million to drive digital services for regional, rural and remote Australia', *Media Release*, 15 June 2009.

31 Senator the Hon Stephen Conroy, Minister for Broadband, Communications and the Digital Economy, Address to IBM Smart Government, 22 June 2011, p. 1.

32 *National Digital Economy Strategy: Leveraging the National Broadband Network to drive Australia's Digital Productivity*, Department of Broadband, Communications and the Digital Economy, 2011, p. 7.

33 Senator the Hon Stephen Conroy, Minister for Broadband, Communications and the Digital Economy, 'Rosemary Sinclair to Chair 2011-2012 Regional Telecommunications Review', *Media Release 2011/213*, 8 July 2011.

4.31 The Review's terms of reference asked it to report on the adequacy of telecommunications services in regional and remote parts of Australia, as well as 'the opportunities that the NBN creates' in improving the delivery of health and education, growth in local economies, business efficiencies, and government services and programs. The Review is to report to the Minister by 5 March 2012.[34]

Local Government

4.32 The Mayor of Central Darling Shire Council (CD Shire Council) noted that, although the Shire was large in size, none of its towns were large enough to support retail services such as car dealers or television and furniture shops. The Mayor stated that local government needed access to State Government entities, retaining access if service provisions changed. In July 2011, the Council was uncertain whether the Shire would get fibre, wireless or satellite, but it noted that there are concerns about each of these solutions. The Council has installed an optic cable so that its mainframe can work between its facilities.[35]

4.33 The CD Shire Council Mayor also raised the issue of current difficulties with existing Telstra connections, and the provision of both Asymmetric Digital Subscriber Line (ADSL) and mobile phone services. The CD Shire Council highlighted that, while towns in the region had fibre running past them, they would not be connected to it, raising the issue of the availability of the 'greatly improved satellite services'.[36]

4.34 While the Australian Local Government Association has developed and released guidelines for councils about their relationship with the NBN, and how to be ready to receive it, the Broken Hill City (BHC) Council, for example, does not have the resources to be able use this material.[37]

4.35 The BHC Council has been a strong advocate of the construction of the Regional Backbone Blackspots Program (RBBP) backhaul infrastructure (mid to long distance transport of data from different locations back to a more central location). As part of an NBN-enabling rollout, in July 2011,

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34 Senator the Hon Stephen Conroy, Minister for Broadband, Communications and the Digital Economy, 'Rosemary Sinclair to Chair 2011-2012 Regional Telecommunications Review', *Media Release 2011/213*, 8 July 2011.

35 Mayor Brown, Central Darling Shire Council, Transcript of Evidence, Broken Hill, 27 July 2011, pp. 21, 22.

36 Mayor Brown, Central Darling Shire Council, Transcript of Evidence, Broken Hill, 27 July 2011, p. 18.

37 Mr Frank Zaknich, General Manager, Broken Hill City Council, Transcript of Evidence, Broken Hill, 27 July 2011, p. 31. See JCNBN, pp. 48-49.

construction of the RBBP backhaul in Broken Hill was expected to be finished by September 2011. Broken Hill is included in the NBN fibre footprint.[38]

4.36 BHC Council recommended that the committee:

- request the Government and NBN Co to provide funding for partnership for regional and remote local governments to assist them 'to understand, develop and progress' digital economy strategies for particular regions, and
- make representations to NBN Co to consider key strategic locations, including Broken Hill, for the priority rollout of the NBN to properties, not just for backhaul infrastructure.[39]

4.37 In an effort to address internet availability in the city, the BHC Council has partnered with its local electricity provider (which has its own fibre optic network) to service more remote sites: the airport, swimming pool and library. In addition to these sites, the NBN will also be required to support a whole range of businesses in Broken Hill, including the film studio.[40]

4.38 The BHC Council's operations are limited for its 200 users at various sites by an ADSL2 service as it operates intermittently. Tele-working is also limited, so that the 100 Mbps of the NBN, or even half that amount, would improve the current situation. The possibility of video or teleconferencing would also be of great benefit to the Council.[41]

Extending the Fibre Footprint

4.39 The NBN fibre footprint covers 93 per cent of all Australian premises[42] and includes communities with more than 1000 premises, and communities

38 Mr Zaknich, Broken Hill City Council, Transcript of Evidence, Broken Hill, 27 July 2011, pp 30, 33.

39 Mr Zaknich, Broken Hill City Council, Transcript of Evidence, Broken Hill, 27 July 2011, pp 30, 31.

40 Mr Zaknich, Broken Hill City Council, Transcript of Evidence, Broken Hill, 27 July 2011, p. 32.

41 Mr Zaknich, Broken Hill City Council, Transcript of Evidence, Broken Hill, 27 July 2011, p. 32. 'Tele-working' is work conducted away from a designated place of business, using telecommunications as a substitute for travel.

42 NBN Co, NBN Co Corporate Plan 2011-2013, p. 12.

with greater than 500 premises where transit backhaul passes near such communities.[43]

4.40 The NBN Co has been asked by the Government to consider implementing a process which would provide users, or other entities, such as local and state governments with the opportunity to consider paying to extend the fibre network, based on a costing by NBN Co.[44]

4.41 If NBN Co is to go into first and second release sites, it engages directly with interested councils to answer questions from such bodies, and others, on progress on the NBN rollout.

4.42 By early September 2011, 284 local government bodies had engaged with NBN Co, either individually, via local regions of council bodies, or through Regional Development Australia committees. While the NBN Co is receiving requests to extend the NBN from suburban councils, most such requests are from regional bodies.[45]

4.43 The NBN Co advised that, while there has been 'some general interest' from councils in extending the fibre network, it had not yet established a mechanism for larger expectations that would require building additional fibre access nodes. The NBN Co expected that it would recover the incremental cost of extending the fibre network to premises beyond the planned 93 per cent of premises.[46]

4.44 The NBN Co also advised that its NBN rollout schedule is based on a 'complex mix of factors', including Government requirements such as regional focuses, the availability of Telstra's infrastructure, the path of the transit network and the construction capability in any given area.[47]

4.45 In its First Report, the committee noted that Julia Creek, Queensland is defined as a 'district rural activity centre'. Julia Creek has educational and health services, and acts as a hub for a 40 000 square kilometre area that supports about 1000 residents. The NBN fibre cable has been laid and passes through Julia Creek, but the town will not be connected to the fibre network.

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43 NBN Co, *Submission 2.3*, p. 1. Provision of NBN services to Julia Creek, Queensland, was discussed in JCNBN, pp 51-52.

44 NBN Co, *Submission 2.3*, p. 2.

45 NBN Co: Mr Quigley, Transcript of Evidence, Canberra, 20 September 2011, p. 6; *Submission 2.5*, p. 2.

46 NBN Co: *Submission 2.4*, p. 1; Mr Quigley, Transcript of Evidence, Canberra, 20 September 2011, p. 14.

47 NBN Co, *Submission 2.5*, p. 2.

4.46 In correspondence to the committee[48], Mr Paul Woodhouse, Mayor of the McKinlay Shire Council, put the view that Julia Creek would benefit from inclusion in the NBN fibre footprint as it would enable provision of better health services, and allow for improved communication for the pastoral industry across great distance.

4.47 Moreover, Mr Woodhouse provided a list of other small towns in Queensland and the NT that could not be included in the fibre footprint, and would benefit from a fibre or satellite connection to the NBN.[49]

4.48 The NBN Co advised that with only 271 eligible premises, Julia Creek does not qualify for the provision of fibre. Subject to final design, premises in Julia Creek would be connected to the NBN by fixed wireless technology. The NBN Co estimated the total cost of providing fibre to premises in Julia Creek to be $1.14 million. This estimate does not include capitalised leases for access to Telstra ducts, or electricity poles required to complete the build.[50]

4.49 Under current policy, if a premise is just outside the fibre footprint, at an additional cost, NBN Co can extend the fibre footprint 'a little further.' As there is no fibre access node covering Julia Creek, a new one would have to be constructed. The implications of this process have not been discussed with the Government, and it would be starting materially to increase the percentage of the continent to be provided with fibre.[51]

4.50 The NBN Co advised that costings for extensions to the NBN fibre network are not 'trivial' exercises, and that:

> Preparing costings around individual propositions is a significant diversion of resources and NBN Co is therefore only intending to do so for locations contiguous with our rollout and when we receive an application under a properly defined process.[52]

4.51 In later correspondence to the committee, Mr Paul Woodhouse stated that the estimated $1.14 million to include Julia Creek within the NBN fibre footprint 'is certainly beyond the means' of the shire council 'within the

48 Mr Paul Woodhouse, Mayor, McKinlay Shire Council, Julia Creek, Queensland, Correspondence, 22 March 2011.

49 JCNBN, First Report, August 2011, p. 51.

50 NBN Co, *Submission 2.3*, pp 1, 2.

51 Mr Quigley, NBN Co, Transcript of Evidence, Canberra, 20 September 2011, pp 7 and 14.

52 Mr Quigley, NBN Co, Transcript of Evidence, Canberra, 13 October 2011, p. 18; NBN Co, *Submission 2.3*, p. 2.

short term' and that 'council remains committed to exploring any avenue in order to bring benefit to the community by this advanced technology.'[53]

4.52 Mr Paul Woodhouse asked for consideration to be given to additional modelling for inclusion of Julia creek to the fibre footprint 'to better assess the gap required in financial terms, and so estimate the level of any co contribution.'[54]

Government Readiness for the NBN

4.53 The Department of Prime Minister and Cabinet and the DBCDE are working closely with all Government agencies responsible for Digital Productivity Issues, and, to ensure that Australian Government organisations are ready for the rollout of the NBN. Government agencies on other programs and initiatives are also involved in this process.[55]

4.54 More generally, the Government recognises that the NBN will be a significant piece of critical infrastructure that will underpin the provision of a range of essential community services. NBN Co has therefore been requested to consult with law enforcement and security agencies to ensure that national security and resilience considerations are taken into account in the design and operation of the network.[56]

4.55 In building the network, NBN Co is providing appropriate redundancy in its core and transmission links to maintain service in the event of an accident or power loss. For example, if a fibre transmission link is cut, network traffic can be diverted via a redundant link to maintain services.[57]

4.56 To maintain access to phone services for home users and small businesses during blackouts, the Government intends to undertake consultation with stakeholders, including emergency services, on the appropriate way of ensuring access to battery backup for those who need it. In the interim, NBN Co will deploy a mandatory battery backup unit that will support continued provision of voice services via the voice port on the network termination device during a power outage. The battery is expected to last

53 Mr Woodhouse, McKinlay Shire Council, Julia Creek, Queensland, Correspondence, 26 October 2011.

54 Mr Woodhouse, McKinlay Shire Council, Julia Creek, Queensland, Correspondence, 26 October 2011.

55 DBCDE, *Submission 3.3*, p. 7.

56 DBCDE, *Submission 3.3*, p. 5.

57 DBCDE, *Submission 3.3*, p. 5.

for approximately five hours, based on a high level of talk time during that period, to support the provision of voice services for those who need them.[58]

4.57 The national telephone-based emergency warning system, Emergency Alert, enables participating States and Territories to issue warnings to telephones linked to addresses within a geographical area affected by an emergency.[59]

4.58 Warnings to landline (voice) and mobile (text) telephones are sent using service/customer address information that is drawn from the Integrated Public Number Database (IPND). The Emergency Alert Service will continue to operate over the NBN to warn people of an emergency. The Government is continuing to work to ensure that the national Emergency Alert system remains fully effective, including information provided from the IPND.[60]

4.59 The NBN Co's Points of Interconnect, the majority of which will be located within existing Telstra exchange facilities, are secure locations with appropriate backup power to support the continued operation of services to premises in the event of blackouts.[61]

Postal Services

4.60 In its August 2011 report *Broadening the debate*, the House of Representatives Standing Committee on Infrastructure and Communications (the Infrastructure and Communications Committee) drew attention to the 'transitional and transformational issues' that will result from wider access to broadband. In particular, that Committee flagged the impact of such change on Australia's postal sector.[62]

4.61 The Infrastructure and Communications Committee was told that the Internet, from a platform of access to superfast broadband, is impacting on postal operations world-wide, including in Australia. Businesses, especially those that have traditionally been large users of postal services, are 'actively substituting' physical forms of communication for electronic ones.[63]

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58 DBCDE, *Submission 3.3*, p. 5.

59 DBCDE, *Submission 3.3*, p. 6.

60 DBCDE, *Submission 3.3*, p. 6.

61 DBCDE, *Submission 3.3*, p. 5.

62 See the Infrastructure and Communications Committee: *Broadening the debate: Inquiry into the role and potential of the National Broadband Network*, August 2011, p. 285.

63 Infrastructure and Communications Committee, pp. 285-286.

4.62 The Infrastructure and Communications Committee was also told that Australia Post (AustPost) had embarked on a process of organisational restructuring that will see it commit $20 million over three years to prepare its 40 000 employees for 'repositioning and new areas of business.' That committee noted that that there has been a significant decrease in regular mail volumes as a result of Internet services, but that this had been offset to some extent by a significant increase in parcel post stimulated by the increased online purchasing.[64]

4.63 The Infrastructure and Communications Committee noted that the Government had been urged to examine actively what measures can be developed to help Australia's postal service to reposition itself in the face of this technological change. That committee recommended:

> That the Government develop a long term strategy to up-skill and/or retrain the existing workforce and develop new training programs to address emerging skills gaps.[65]

4.64 These technological changes have already impacted on the approximately 3000 licensed post offices (LPOs) across Australia which account for about 80 per cent of AustPost's network. It is 'quite typical' for a post office in regional Australia to serve people in a 50 or 100 kilometre radius.[66]

4.65 Typical manual LPOs are small, serving rural and remote communities. They cannot perform such transactions as:

- Electronic funds transfers.
- Commonwealth Bank debit card deposits/withdrawals.
- Mobile phone top-ups.
- Proof of identity transactions.
- Local, State or Federal Government services.
- Business banking.[67]

4.66 The Post Office Agents Association Ltd (POAAL) stated that, if the NBN is to be Australia's next major infrastructure project, it should be used to help maintain or improve the existing infrastructure. Of the 3000 LPOs in its retail network, 464 do not have access to AustPost's electronic point-of-

64 Infrastructure and Communications Committee, p. 286.

65 Infrastructure and Communications Committee, Recommendation 16, p. 289.

66 POAAL, *Submission 4*, p. 1; Mr Ian Kerr, Chief Executive Officer, POAAL, Transcript of Evidence, Melbourne, 28 July 2011, p. 5. See JCNBN, pp. 52-53.

67 POAAL, *Submission 4*, p. 4.

sale (EPOS) system. The 'vast majority' of these are in regional and remote Australia. EPOS has not been installed because these LPOs process a small number of transactions per year: typically, less than 2500. If there are under 10 000 transactions per year, the owner/operator pays a 'shortfall fee' to AustPost.[68]

4.67 According to AustPost, the approximate cost of installing EPOS in an LPO is $20 000. Costs associated with the facility include:

- Installing and maintaining the data connection, which is the major cost.
- Computer hardware.
- Training.
- Ongoing help and support.[69]

4.68 As a result of AustPost's guidelines, licensees without EPOS have to be prepared to put up funds to have it installed themselves and hope that their businesses will provide returns.[70]

4.69 The POAAL noted that AustPost is in the process of upgrading its EPOS network to a system that needs more bandwidth than the existing system. The POAAL's members complain that the new system is too slow and that it lacks bandwidth for high speed data communications.[71]

4.70 The POAAL stated that access to high speed data connections at low cost by the NBN would reduce a significant cost barrier to the installation of EPOS in small LPOs. This would be 'of immediate and enduring benefit' to local communities, and the owners/operators of LPOs.[72]

4.71 The POAAL believed that communities served by LPOs without EPOS are not able to access the full range of AustPost services, including financial services. It also believed that LPOs in regional and remote Australia are still viable business options, provided that they can offer a full range of products.[73]

4.72 Without access to AustPost's electronic network, and all its products and services, it is unlikely that the numbers of transactions of a manual LPO

68 POAAL, *Submission 4*, p. 4; Mr Kerr, POAAL, Transcript of Evidence, Melbourne, 28 July 2011, pp. 3, 4.

69 POAAL, *Submission 4.1*, p. 3; *Submission 4*, p. 4.

70 Mr Kerr, POAAL, Transcript of Evidence, Melbourne, 28 July 2011, p. 3.

71 Mr Kerr, POAAL, Transcript of Evidence, Melbourne, 28 July 2011, p. 4.

72 POAAL, *Submission 4*, pp. 4-5.

73 POAAL, *Submission 4.1*, p. 3; Mr Kerr, POAAL, Transcript of Evidence, Melbourne, 28 July 2011, p. 3.

would ever increase sufficiently to meet the minimum criteria for the installation of EPOS.[74]

4.73 The greater the range of services offered by LPOs, the more viable they are as businesses. Manual LPOs are at greater risk of closure than those with EPOS and, if they close, communities can lose more than the services they provide. This includes the jobs of those who worked there and the 'knock-on' effects for other businesses and services. In very small communities, the post office is often the only shop in town.[75]

4.74 Postal services are evolving with advances in technology and the growth of e-commerce. As they do not have EPOS, manual LPOs are not part of AustPost's 'track-and-trace' network. Remote and regional communities do not have easy access to many retailers and, where products are not available locally, customers increasingly use the internet to find them. LPOs are often involved in delivering these products.[76]

4.75 The POAAL drew attention to the changing nature of postal services, noting that the greater availability of broadband internet has been linked to falling numbers of letters posted. Nevertheless, addressed mail continues to be important for businesses, and parcel services are becoming an increasingly important distribution channel for businesses, especially those online. It was estimated that parcel numbers have grown about 10 per cent per year over the last six years. POAAL suggested that increased broadband access would 'probably stimulate e-commerce, resulting in increased numbers of parcels.[77]

4.76 Major banks have closed many of their smaller branches outside major centres, so that communities have come to rely on the post office to withdraw cash. The POAAL believed that access to a greater range of banking options would have positive effects on other local businesses.[78]

4.77 The POAAL was in favour of strengthening the network of post offices by reducing the cost of installing EPOS as this would provide AustPost with 'a true electronic network' across the country. This would enable communities to benefit from the NBN, even if individuals do not have access to the internet. If this electronic network became more widely

74 POAAL, *Submission 4*, p. 4.

75 POAAL, *Submission 4*, p. 5; Mr Kerr, POAAL, Transcript of Evidence, Melbourne, 28 July 2011, p. 5.

76 POAAL, *Submission 4*, p. 5.

77 POAAL, *Submission 4.1*, p. 3; Mr Kerr, POAAL, Transcript of Evidence, Melbourne, 28 July 2011, p. 3. The Infrastructure and Communications Committee also noted the 'significant increase' in parcel post from the increase in online purchasing: *Broadening the debate*, p. 286.

78 POAAL, *Submission 4*, p. 5.

available because the NBN reduced installation costs, it would assist in removing some of the disparities between metropolitan and regional/remote areas.[79]

Health

4.78 In an address to the Ehealth summit in 2010, the Minister noted that the NBN:

> ...will revolutionise the way health services can be delivered to people in their homes whether by their GPs, specialists and other health professionals, or as outpatients from the hospital system. Telehealth can assist aged people to stay in their homes longer, thereby reducing admissions to aged care facilities and improving their quality of life.[80]

4.79 In the Digital Strategy, the DBCDE noted that the NBN will provide:

> ...a platform that allows homes, doctors' surgeries, pharmacies, clinics, aged-care facilities and allied health professionals to connect to affordable, reliable, high-speed and high-capacity broadband. This is a major opportunity to improve the way healthcare is delivered in Australia.[81]

4.80 According to the Digital Strategy, the NBN will also:

> ...assist in improving health service delivery, delivering care to the home, enabling innovation in healthcare, facilitating widespread adoption of electronic records and reducing funding pressures on the health system. The NBN will also enable the connection of health clinics and facilities in regional Australia with major metropolitan health institutions, increasing the availability of remote consultation services.[82]

79 POAAL, *Submission 4*, pp. 5-6.

80 Senator the Hon Stephen Conroy, Minister for Broadband, Communications and the Digital Economy, Address to Ehealth summit, 1 December 2010, p. 1.

81 The Digital Strategy, p. 33.

82 The Digital Strategy, p. 33.

4.81 The Digital Strategy quoted an Access Economics study from 2010 that analysed the potential impacts of tele-health[83] under the NBN, identifying a range of benefits including:

- Medical effectiveness.
- Decreased travel to attend medical appointments.
- Increased employment.
- Ongoing benefits to Australia of between $2 billion to $4 billion per year.[84]

4.82 With its partner, the University of New England, NBN Co has already been able to demonstrate remote medical training, with positive responses.[85]

4.83 In its August 2011 report, the Infrastructure and Communications Committee commented that health 'is undoubtedly seen as the sector that will benefit most from the NBN'.[86]

4.84 The Infrastructure and Communications Committee noted various tele-health applications that already exist or that will become feasible via the NBN. These include:

- Remote consultations, diagnostics and treatment.
- Electronic storage and transmission of medical data.
- In-home monitoring.
- Rehabilitation and preventative health.
- Aged care.
- Mental health.[87]

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83 'The term Tele-health refers to healthcare delivery, or closely related processes (such as education), when some of the participants are separated by distance and information and communications technologies are used to overcome that distance …Tele-health is usually considered to be a subset of e-health, which refers to the use of Information and Communications Technologies (ICT) in healthcare. A primary focus of e-health is the implementation and use of Electronic Medical Records.' See the Infrastructure and Communications Committee, *Broadening the debate*, p. 23.

84 The Digital Strategy, p. 33.

85 NBN Co, *Submission 2.5*, p. 11.

86 The Infrastructure and Communications Committee, p. 23.

87 See the Infrastructure and Communications Committee, Chapter 3, pp. 37-45, for details of these applications.

4.85 The Infrastructure and Communications Committee also noted that other benefits would also follow from the rollout of the NBN, including:

- Improved service in regional areas.
- Attraction, retention and use of health professionals in regional and remote areas.
- Continued development of e-health records.
- Improved medical education.[88]

4.86 In addition, the Infrastructure and Communications Committee commented that the availability of 'fast and ubiquitous broadband' will change the delivery of health services in Australia by enabling more efficient delivery of services. This would result in savings of costs and time for both citizens and providers. It would also enable better access to services for those isolated by distance or incapacity, 'resulting in improved health outcomes and enhanced quality of life.'[89]

4.87 The Infrastructure and Communications Committee observed that the ability to deliver health services more efficiently is extremely important for an ageing population, and for related increases in healthcare spending. It referred to estimates of possible savings, including a report by the United Nations Educational, Scientific and Cultural Organisation (UNESCO), indicating that savings of between 10 and 20 per cent were possible in a range of ways, from reduced hospital admissions to more productive use of the stretched medical workforce.[90]

4.88 Capgemini Australia Ltd, a Melbourne consulting, technology and outsourcing company, noted that use of e-technologies could lower health costs and could be achieved through:

- appropriate patient monitoring in the home to reduce service delivery costs and overcrowding;
- use of the Personally Controlled Electronic Health Record;
- implementation of joint ventures for driving back office efficiencies, and
- changes to the performance model of funding for hospitals and clinicians.[91]

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88 See the Infrastructure and Communications Committee, Chapter 3, pp. 45-54, for details of these benefits.

89 Infrastructure and Communications Committee, p. 57.

90 Infrastructure and Communications Committee, p. 57.

91 Capgemini Australia Ltd, *Submission 15*, p. 3.

4.89 Capgemini suggested that, through the use of high speed symmetrical broadband, patients with diabetes, kidney disease, heart disease and asthma could be monitored in their homes in consultation with their practitioners.[92]

4.90 This would require the development of specific applications to enable:

- patient and practitioner to connect;
- secure transportation of results and supporting images;
- provision of referrals, and
- connections to local practitioners for support.[93]

4.91 Capgemini made reference to concerns of medical practitioners in remote South Australia that the full benefits of e-health will not be available because of a reliance on satellite services. The NBN Co stated that it was seeking to provide a good high speed satellite service, one that is capable of high definition videoconferencing. The NBN Co added that, through its satellite service, the special e-health needs of regional and remote communities were being addressed.[94]

Workforce Issues in ICT Education

4.92 Capgemini stressed that ICT professionals must be available to undertake development and implementation of applications within Australia. They must also be able to live and work within governance frameworks for privacy and security. The firm was therefore concerned that a shortage of ICT skills could have an impact on the benefits of the NBN for e-health.[95]

4.93 In this context, Capgemini noted that, while it used to have the largest intake of ICT students in Australia, Monash University had halved the size of its ICT department three years ago. Only two Australian universities are now providing specific ICT e-health development programs, leading to concerns that insufficient graduates might be available to meet the markets' needs. The firm provided information that, between 2000 and 2004, university ICT places declined in South Australia by 50 per cent and in Western Australia by 38 per cent. Capgemini noted

92 Capgemini, *Submission 15*, p. 3.

93 Capgemini, *Submission 15*, p. 3.

94 Mr Quigley, NBN Co, Transcript of Evidence, Canberra, 20 September 2011, pp. 20-21.

95 Capgemini, *Submission 15*, p. 3; Mrs Shelley Oldham, Vice-President, Head of Public Sector, Transcript of Evidence, Melbourne, 28 July 2011, p. 9.

that graduates from this period would have been entering the workforce by 2008 at the latest.[96]

Far West Local Health District Board

4.94 The Far West Local District Health Board (FWLDHB) is based in Broken Hill and looks after approximately 35 000 people. It has state-of-the-art equipment: Internet connections and facilities for videoconferencing, so that it does a lot of its business by video link. While Medicare benefits are now available to support video-conferencing from remote locations, FWLDHB cannot support all the tertiary services that are needed. Outside expertise is brought in, and much can be done by video-conferencing, but high quality connections are required.[97]

4.95 Wilcannia and Broken Hill were pilot sites for the NSW tele-health initiative at a time when FWLDHB was struggling to provide services to remote communities. Tele-health was introduced to bridge the gap between metropolitan and remote and regional sites. In 1995, FWLDHB was able to provide services between Broken Hill and Wilcannia, so that there were at least 54 video-conferencing tele-health service and facilities that have been maintained. Since then, technology has advanced significantly.[98]

4.96 As FWLDHB cannot presently connect its videoconference facilities to its metropolitan partners, it is losing access to clinical services for its communities. Almost every videoconference is interrupted in some way by either image degradation or interruptions to connections or the sound. FWLDHB cannot retain its reputation in medicine if it cannot keep up its technological connections.[99]

4.97 There has also been degradation of professional medical education because connections are not adequate for peripheral sites in FWLDHB's area to participate in interactive environments. More generally, FWLDHB has found that if quality services are not provided, participants tend to drop out. FWLDHB commented that if it cannot deliver a service that

96 Mrs Oldham, Capgemini Australia Ltd, Transcript of Evidence, Melbourne, 28 July 2011, pp. 9, 8; Capgemini, *Submission 15.1*, p. 1.

97 Dr Stephen Flecknoe-Brown, Chairman, Far Western Local Health District Board (FWLHDB), Transcript of Evidence, Broken Hill, 27 July 2011, pp. 41, 40. See JCNBN, p. 46.

98 Ms Sharyn Cowie, Manager, Tele-health, and Acting Manager, Electronic Medical Record Support Team, FWLHDB, Transcript of Evidence, Broken Hill, 27 July 2011, p. 41.

99 Dr Flecknoe-Brown, FWLHDB, Transcript of Evidence, Broken Hill, 27 July 2011, p. 41.

engages the participants, 'then it is almost as bad' as not being able to access the service anyway.[100]

Royal Flying Doctor Service, South Eastern Section

4.98 The Royal Flying Doctor Service, South Eastern Section (RFDS SE) provides health care to some of the most isolated people and communities, with some of the worst health indicators, in the country. The RFDS SE commented that:

> To say that our clients are disadvantaged in health is an understatement. And the difference in health outcomes in these populations lies primarily in access to, and the use of, health services.[101]

4.99 The RFDS SE is committed to providing the best possible health care to Australians living, working and travelling throughout far-west NSW, south-west Queensland and north-east South Australia. Its headquarters are in Broken Hill, and access to fast and reliable broadband is crucial to all aspects of its operations.[102]

4.100 The RFDS SE also works closely with the University of Sydney's Department of Rural Health in Broken Hill (UDRH) to support the training and education of current health professionals, remote health workers and the future health workforce.[103]

4.101 Rurally based research, needed to determine how best to reduce the gap in health outcomes, is also dependent on broadband services. Researching rural health, access problems and new service models requires teams of experts working collaboratively. UDRH staff based in Broken Hill work closely with teams in Sydney, Newcastle, Orange, Lismore, Moree, Bendigo, Alice Springs and overseas. The ability to work collaboratively, to supervise PhD students, to attract and retain post-doctoral researchers, and to undertake research that is both competitive and practical, 'depends on good, reliable and fast internet services: services that are taken for granted in the city.'[104]

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100 Dr Flecknoe-Brown, FWLHDB, Transcript of Evidence, Broken Hill, 27 July 2011; p. 42; Ms Sharyn Cowie, FWLHDB, Transcript of Evidence, Broken Hill 27 July 2011, p. 42.

101 Royal Flying Doctor Service, South Eastern Section (RFDS SE), *Submission 17*, p. 1. See JCNBN, pp. 46-47, 48.

102 RFDS SE, *Submission 17*, p. 1.

103 RFDS SE, *Submission 17*, p. 1.

104 RFDS SE, *Submission 17*, pp. 4-5.

4.102 A key focus for both RFDS SE and UDRH is the medical education of undergraduate health students and junior medical officers. The UDRH provides extensive clinical training for medical, nursing and allied health students in Broken Hill and surrounding communities. Placements in regional and remote areas provide students with valuable clinical experience, and help inform metropolitan providers about practice in those areas and the needs of residents in those areas. They promote appropriate practices for remote areas to future health professionals, so helping increase the future health workforce in such areas.[105]

4.103 Fast and reliable broadband enables the continuation of close links with their universities during these clinical placements, ensuring students can continue to have access to formal course content. It also enables access to other world-class educational resources.[106]

4.104 As it operates in remote areas, the RFDS SE has had to embrace new technologies to provide essential medical and health services in far-west NSW and beyond. Before the term was invented, the RFDS SE provided tele-health consultations by conducting consultations over the radio, initially by Morse Code. The RFDS SE pioneered radio medical calls and provided station properties with access to the outside world.[107]

4.105 In 2007, the RFDS SE began a project to provide its clinicians with electronic medical records. The database was centralised and clinicians were provided with access remotely to patients' records. Remote access was provided using wireless USB broadband and a company system to log on. This is 'no longer acceptable.'[108]

4.106 The introduction of iDevices such as tablets and smart phones with NextGen capability, and the resultant reduction in bandwidth, means that there has been an adverse effect on clinical services provided by the RFDS SE. At the current rate of decline of the broadband system, if nothing is done, a point will be reached when it will be unusable for RFDS SE and its clinicians. The RFDS SE believed that the Broken Hill area needed the NBN, or there will be 'a very serious impact' on the health of its people.[109]

4.107 The RFDS SE provides consultations to remote people by telephone, but tele-health has been identified as a future direction and a growing need to

105 RFDS SE, *Submission 17*, p. 4.

106 RFDS SE, *Submission 17*, p. 4.

107 RFDS SE, *Submission 17*, p. 1.

108 Mr Gary Oldman, Information Technology Manager, Royal Flying Doctor Service, South Eastern Section (RFDS SE), Transcript of Evidence, Broken Hill, 27 July 2011, p. 34.

109 Mr Oldman, RFDS SE, Transcript of Evidence, Broken Hill, 27 July 2011, pp. 34-35.

provide timely access to appropriate medical care. It would like to offer consultations not only by telephone but by using videoconferencing, as well as improved capabilities for data transmission of clinical information.[110]

4.108 The health centre in Broken Hill is installing high definition video cameras in the emergency assessment areas of its clinics. The RFDS SE needs to be able to access this technology to enable it to assist rural nurses in providing emergency care.[111]

4.109 The RFDS SE also flies into 18 isolated communities on a regular basis in far-west NSW, south west Queensland and north-east South Australia to provide clinics. For coordinated care, it needs to be able to access centralised medical records and, for this, it needs reliable broadband.[112]

4.110 The NBN is planned to pass through Wilcannia, a regular RFDS SE clinic location accounting for approximately 25 per cent of its workload. A fibre access node has not been planned there: one node at Broken Hill is proposed for the 640,000 square kilometres covered by RFDS SE. An additional node at Wilcannia would significantly improve broadband capacity in the region, allowing it to implement a range of initiatives that would improve and enhance health services and outcomes.[113]

Maari Ma Health Aboriginal Corporation

4.111 The Maari Ma Health Aboriginal Corporation (Maari Ma) is involved in research and evaluation, focussing on Aboriginal issues in the region and leading 'inter-agency work on child development and well-being.'[114]

4.112 The Maari Ma was of the view that resources are needed to put programs in place to address Aboriginal health in remote Australia. Remote Australia is often a 'poor cousin' to metropolitan areas in the provision of

110 Dr Michael Hill, Senior Medical Officer, Royal Flying Doctor Service, South Eastern Section (RFDS SE), Transcript of Evidence, Broken Hill, 27 July 2011, p. 35.

111 Dr Hill, RFDS SE, Transcript of Evidence, Broken Hill, 27 July 2011, p. 35.

112 Dr Hill, RFDS SE, Transcript of Evidence, Broken Hill, 27 July 2011, p. 35.

113 RFDS SE, *Submission 17*, p. 2.

114 Maari Ma Health Aboriginal Corporation (Maari Ma) is an Aboriginal community-controlled, regional health service providing health services for less than 3000 Aboriginal people across almost 200,000 square kilometres of far-western NSW. Maari Ma manages mainstream services funded by NSW Health, under the Lower Western Sector Agreement, in Tibooburra, Wilcannia, Menindee, Ivanhoe, Dareton, Wentworth and Balranald.

Ms Cathy Dyer, Director Corporate Services, Maari Ma, Transcript of Evidence, Broken Hill, 27 July 2011, p. 25. See JCNBN, pp. 53-54.

the infrastructure needed to close the gap between Aboriginal and non-Aboriginal Australians.[115]

4.113 To use the available technology effectively at Maari Ma's regional office in Broken Hill, two ADSL2 connections have to be used. Maari Ma commented that, because its office is only a few hundred metres from the exchange, 'decent' ADSL2 speeds are available.[116]

4.114 Ten young aboriginal health workers earned TAFE Certificates through a block study program in Broken Hill and holding weekly videoconferences with teachers in Dubbo. Maari Ma now has ten new clinicians.[117]

4.115 Maari Ma has also implemented innovative service deliveries, such as an outback vascular service. While specialists in kidney disease, cardiology and endocrinology from the Royal Prince Alfred Hospital in Sydney visit quarterly, Maari Ma holds monthly videoconferences to receive these services.[118]

4.116 In more remote areas, higher speeds for both uploading and downloading are required because, at present, only the bare minimum of technology is used. The emphasis is on access to patient records and appointments are often recorded on paper, rather than using the available software. Maari Ma pointed out that, if using mobile phones around Broken Hill was difficult, it was 'ten million times worse' in Wilcannia.[119]

4.117 For the past three years, doctors in Menindee and Wilcannia have used a variety of technologies to get connections for the available software. Maari Ma has invested in ICT in 'the last 12 to 18 months' to enable it to be ready to receive the NBN.[120]

Central Australia

4.118 The committee received evidence that, apart from Alice Springs and some other remote communities, Central Australia will be served by satellite. Telstra has an east west fibre link from WA to the east coast which passes through or close to some of the larger communities. They have asked whether, if they are not going to be served with fibre to the premises, they could receive terrestrial wireless connections.

115 Ms Dyer, Maari Ma, Transcript of Evidence, Broken Hill, 27 July 2011, p. 26.

116 Mr Michael Hanley, Manager Information Technology, Maari Ma, Transcript of Evidence, Broken Hill, 27 July 2011, p. 28.

117 Ms Dyer, Maari Ma, Transcript of Evidence, Broken Hill, 27 July 2011, p. 26.

118 Ms Dyer, Maari Ma, Transcript of Evidence, Broken Hill, 27 July 2011, p. 26.

119 Ms Dyer, Maari Ma, Transcript of Evidence, Broken Hill, 27 July 2011, p. 28.

120 Mr Hanley, Maari Ma, Transcript of Evidence, Broken Hill, 27 July 2011, pp. 27, 28.

4.119 The committee was also informed that medical practitioners in the Anangu Pitjantjatjara Yankunytjatjara lands in the far north of northern South Australia are concerned that the full benefits of e-health with the NBN will not be accessible because they will have to rely on satellite.

4.120 The NBN Co stated that, as the satellite service was being finalised, it was negotiating to provide a high speed service capable of high-definition video-conferencing. NBN Co undertook to provide information about what is underway to ensure that the health needs of regional and remote Australia are met.[121]

Education

4.121 In May 2011, the Government announced the provision of $27.2 million for a four year NBN-Enabled Education and Skills Services Program, to support the development of online and interactive education and training projects. The sponsoring Ministers observed that:

> The NBN will support the delivery of online learning through the video and web-conferencing platforms needed for 21st century education, training and skills development...We will look at innovative education and training projects, which have the potential to deliver high quality, accessible and sustainable online tools to Australian schools, TAFEs, universities, workplaces and homes...The program will focus on projects which help Australians to study, learn and develop skills no matter where they live or work around Australia.[122]

4.122 In the Digital Strategy, the DBCDE stated that:

> The availability of ubiquitous, high-speed broadband has the potential to significantly extend the reach, availability and quality of education services, particularly in regional areas, to help meet these needs. This can be achieved by supplementing teaching and training with access to subject matter experts and teachers outside of the local area. In addition, the greater data capacity of the NBN (both download and upload) can enable more intensive and

121 Mr Quigley, NBN Co, Transcript of Evidence, Canberra, 20 September 2011, pp. 20, 21.

122 The Hon Peter Garrett MP, Minister for School Education, Early Childhood Education and Youth, Senator the Hon Chris Evans, Minister for Tertiary Education, Skills, Jobs and Workplace Relations, Senator the Hon Stephen Conroy, Minister for Broadband, Communications and the Digital Economy, 'Improving education and skills development through the NBN, *Media Release*, 31 May 2011.

immersive online interactions, resulting in higher-quality learning outcomes for students.[123]

4.123 These interactions can occur through:

- greater use of the increasing array of online educational materials, or
- access to video-conferencing with other classrooms or institutions in Australia or overseas, or
- the increased use of bandwidth intensive applications, such as high definition video, for interactive instruction or learning.[124]

4.124 As part of the first switch on event on the mainland at Armidale, NSW, NBN Co had demonstrated high definition video conferencing between high school choirs in Tasmania and Armidale. NBN Co's retail service providers (RSPs) and university partners, Telstra, Internode, iPrimus, iiNet, had also demonstrated educational activities, multi-way business video-conferencing, high speed broadband entertainment through T-Hub and Fetch TV. NBN Co advised that the feedback in response to these demonstrations had been 'positive'.[125]

4.125 Capgemini believed that technology had changed the pedagogical model by creating environments where students can lead their own learning, undertake research and interact on a daily basis with other students across the globe. While the NBN will provide a mechanism for high value content for schools and homes, specific applications will be required to make full use of the capability. Overseas examples demonstrated the value of specific applications, online tools for collaboration, standards-based curriculums and teacher training skills, especially for disadvantaged communities.[126]

4.126 Capgemini noted that the Government had released $27.2 million for the NBN-Enabled Education and Skills Services Program for innovative proposals to support project development and deployment trials for communities targeted to benefit early from the NBN. Capgemini also noted the Government's opportunity to increase the capacity of the Australian ICT industry. Capgemini will be able to increase the value of locally designed and developed applications by guiding recipients of

123 The Digital Strategy, p. 36.

124 The Digital Strategy, p. 36.

125 NBN Co, *Submission 2.5,* p. 11.

126 Capgemini, *Submission 15*, p. 4.

funding to work with the ICT sector to design, develop and commercialise suitable applications.[127]

4.127 Capgemini was also concerned that a shortage of ICT skills could have an impact on the benefits of the NBN for education.[128]

M&S Consultants Pty Ltd

4.128 Mr Michael Wilson of M&S Consultants noted that:

> The currently proposed and offered NBN satellite solution does not support distance education as it does not support video-conferencing or have multicast functionality.[129]

4.129 Mr Michael Wilson commented that for the past five years the NT School of the Air (SOTA) has been delivering successful Interactive Distance Learning lessons to students wherever they are located. The SOTA uses technology that does not support video-conferencing and does not have multicast functionality, but delivers education that is resource and cost effective.

4.130 Mr Michael Wilson believed that the NBN's satellite solution is 'inferior and inadequate' for the needs of students who will receive education via satellite. If this solution is rolled out in its present form, students will be 'severely disadvantaged and forced to take a retrograde step' in their education.[130]

4.131 Mr Michael Wilson believed that the currently available level of multicasting would not be available via the NBN's satellite service 'for the next five years', and that it was not clear what would be provided then. Mr Michael Wilson also believed that the NBN would not support current requirements for video-conferencing, and will not therefore be able to accommodate future developments in either field.[131]

4.132 Mr Michael Wilson stated that under the NBN 'probably about 50 per cent' of the NT population would be serviced by satellite or wireless. Mr Michael Wilson stated that people in regional and remote Australia were promised that the NBN would provide communications that would

127 Capgemini, *Submission 15*, p. 4.

128 Mrs Shelley Oldham, Capgemini, Transcript of Evidence, Melbourne, 28 July 2011, p. 9.

129 M&S Consultants Pty Ltd, *Submission 7*, p. 1; Mr Wilson, Transcript of Evidence, Broken Hill, 27 July 2011, p. 10. See JCNBN, p. 48.

130 M&S Consultants: *Submission 7*, p. 1; Mr Wilson, Transcript of Evidence, Broken Hill, 27 July 2011, pp. 10, 12.

131 M&S Consultants: *Submission 7*, pp. 3-4; Mr Wilson, Transcript of Evidence, Broken Hill, 27 July 2011, p. 13; 5-6.

be superior to what they had. Mr Michael Wilson believed that what has been offered by NBN Co 'is not even comparable to what currently exists', because current solutions take no account of the needs of people that rely on satellites for communications in remote areas.[132]

4.133 In response to these concerns, NBN Co advised that the interim satellite service was put in place at the Government's request to upgrade the existing Australian Broadband Guarantee. It was launched on 1 July 2011, but it was not intended to meet the needs of SOTA. The interim service is scheduled to run until 2015 when NBN Co plans to launch two high capacity satellites. This long term 'very capable service' will provide videoconferences and multicast facilities.[133]

4.134 The DBCDE confirmed that multicast and commercial grade services will be available over the long term satellite service. E-health and e-learning, such as the interactive distance learning multicast application used by SOTA will be supported by the long term satellite solution.[134]

4.135 The NBN Co did not agree with the estimate that 'about 50 per cent' of the Territory would be served by satellite. The percentage of premises in the NT fibre footprint will be 'substantially higher' and likely to approximate the national average. As NBN Co intends to launch two KA band satellites to provide wholesale broadband services, it did not believe that current bandwidth constraints will be relevant.[135]

Regional development

Regional Development Australia Far West NSW

4.136 Regional Development Australia Far West NSW (RDFW) stated that existing broadband services in Broken Hill did not meet customer expectations in terms of price or product quality, and that test results showed deficiencies in speed and consistency of service. The RDFW drew attention to 'the tremendous disadvantages' faced by residents in the

132 M&S Consultants: *Submission 7*, p. 7; Mr Wilson, Transcript of Evidence, Broken Hill, 27 July 2011, p. 14;

133 Mr Quigley, NBN Co, Transcript of Evidence, Canberra, 20 September 2011, pp. 4, 2.

134 DBCDF, *Submission 3.3*, p. 10.

135 NBN Co, *Submission 2.4*, p. 6.

region, and to plans to improve the regional economy through sector diversification.[136]

4.137 The RDFW wishes to pursue opportunities in eco-tourism and creative industries, through proposals to nominate the Menindee Lakes area as a Ramsar site and the completion of the film studio in Broken Hill respectively. Both industries are seen as 'heavily dependent' on improved technology.[137]

4.138 In 2010, it was understood that NBN's Mildura-Broken Hill cable was expected to be ready to be switched on in September 2011. In July 2011, the RDFW was aware that there had been confusion between switching the cable on and rolling out the fibre to premises, and was waiting for advice about when the cable would be switched on.[138]

4.139 The NBN Co noted that, at the hearing in Broken Hill in July 2011, there was some confusion between the Government's RBBP, scheduled for completion in Broken Hill in 2011, and the rollout of the NBN. This confusion has since been 'resolved'. A 12-month rollout plan was released in mid October 2011 which will be 'followed by a three-year indicative rollout plan early' in 2012.[139]

Mining

4.140 Internet access and communications generally are seen as ways of resolving problems in recruiting and retaining people in the mining industry in Broken Hill. The industry relies on technology with remote access to software, so that it needs the capacity for external contractors to be able to dial in to assist with trouble-shooting.[140]

4.141 The distance of the Perilya mine from Broken Hill 'severely' limits the ability of the available technology to meet the mine's requirements economically. Thus, although technology has been increased to allow for online purchasing, the mine has difficulties in sending photos or large files externally. It has a videoconferencing facility it cannot use. As the NBN will not be available for some time, Perilya has had to commission Telstra to install a fibre link at a much greater cost than would have been incurred

136 Regional Development Far West Inc (RDFW), *Submission 8*, p. 1. See JCNBN, pp. 49-50.

137 Mrs Linda Nadge, Executive Officer, RDFW, Transcript of Evidence, Broken Hill, 27 July 2011, pp. 17, 22.

138 Mrs Nadge, RDFW, Transcript of Evidence, Broken Hill, 27 July 2011, p. 21.

139 NBN Co, *Submission 2.4*, pp. 7, 8. The 12-month rollout plan was launched on 18 October 2011.

140 Mr Lance Duggan, Commercial Services Manager, Perilya Broken Hill Ltd, Transcript of Evidence, Broken Hill, 27 July 2011, p. 19.

via the NBN. The lack of a reliable service will force the mine to use more resources from its head office in Perth, thus limiting its ability to assist businesses to create business within the Broken Hill area.[141]

4.142 The mine has some ageing infrastructure, mainly copper lines, and has installed number of underground fibre links that struggle for access through Telstra's exchange. The current mine data link is an inadequate single ADSL line. Perilya has expanded overseas and around Australia, and staff has difficulty performing their duties because links are non-existent or too slow.[142]

4.143 The Perilya mine has 67 houses with fixed radio access (FRA), providing a telephone service through 56 kilobytes per second dial-up modems. There is an additional cost on top of the FRA service: a dying technology, with 'only a few' Telstra personnel available in Australia to service it. Telstra is installing NextGen services, still only able to handle a finite amount of data, but only into occupied houses. When houses are occupied later, the occupants will have to pay to install NextGen. Access to the NBN will be provided probably via fibre to the node for all 67 houses but it is required soon as, when support for FRA is removed, there will be no service for all or some of these houses.[143]

Consultation with Regional and Remote Communities

NBN Co's Plans

4.144 The NBN Co's Information Pack stated that effective engagement with Communities and stakeholders in the NBN was 'a key priority' for NBN Co. It had established a dedicated group whose task it is to engage with communities and stakeholders 'throughout the project rollout.' A structured program of community and stakeholder engagement activities had been 'designed and articulated.'[144]

4.145 The NBN Co said that it would:

141 Mr Duggan, Perilya Broken Hill, Transcript of Evidence, Broken Hill, 27 July 2011, pp. 19, 20.

142 Mr Duggan, Perilya Broken Hill, Transcript of Evidence, Broken Hill, 27 July 2011, p. 19.

143 Mr Duggan, Perilya Broken Hill, Transcript of Evidence, Broken Hill, 27 July 2011, pp. 20, 24.

144 NBN Co, *National Broadband Network Information Pack*, 15 April 2011, Chapter 13.

> ...endeavour to keep key local stakeholders such as local councils and other regulatory authorities well informed throughout the rollout program...[145]

4.146 The NBN Co's key community relations objectives are:

- To ensure that all key stakeholders are identified and engaged in an appropriate, timely and consistent manner, and their need and interests are recognised.
- To foster open and ongoing channels of communication with stakeholders during each project phase.
- To understand issues and concerns and resolve or escalate them in an appropriate manner.
- To provide stakeholders with information about construction and/or environmental impacts that will affect them, and create awareness of mitigation measures to minimise these impacts.
- To educate the community and key stakeholders about the benefits of the NBN.[146]

Public Education Activity

4.147 The NBN Co drew the committee's attention to its communications and stakeholder activities 'prior to during and after rollout in each area, in line with the Government requirement to provide Public Information on Migration (PIM).' The Government is committed to providing these activities for each fibre serving node, roughly 3000 premises.[147]

4.148 The PIM activities are primarily to enable the smooth migration of customers to the NBN. They will be developed in consultation with the Government, Telstra and the wider industry, covering fundamental questions relating to continuity of service, such as:

- when and how to migrate services from the copper network to an NBN-based service;
- what equipment and wiring (if any) is needed, and

145 NBN Co, *National Broadband Network Information Pack*, 15 April 2011, Chapter 13.

146 NBN Co, *National Broadband Network Information Pack*, 15 April 2011, Chapter 13.

147 NBN Co: *Submission 2.4*, p. 9; Mr Quigley, Transcript of Evidence, Canberra, 13 October 2011, p. 3.

- the nature of services to become available, and what these will enable.[148]

4.149 A public education activity is planned to provide information to ensure, to the greatest practical extent, that Australians maintain the continuity of their telecommunication services during the move to the NBN. This public education activity will:

- provide advance notice of service rollout;
- explain the actions people need to take to connect to the NBN, and
- encourage people to start the migration process onto the NBN before their old service is retired.[149]

4.150 Increasing resources will therefore be put into providing educational material and information, and material will also be available on the NBN Co website which is regularly updated. The NBN Co will focus its community engagement around the rollout of the Network. The NBN Co is putting in place a unit to go ahead of the rollout to hold town meetings and information days, as well as using electronic means, to spread information about the network.[150]

4.151 The NBN Co also makes information available through media announcements, community-run forums, ongoing liaison with stakeholders and speaking engagements. The NBN Co has put in place a Solutions Centre, and a free 1800-series phone number to answer questions.[151]

4.152 The 1800 number for its Solutions Centre is widely displayed on the NBN Co website and business cards that field staff, contractors and management hand out to end-users. This number is also on all case studies, community information documents and all documentation that goes out to members of the public alerting them of any work in their area. Since commencing operations on 19April 2011, the call centre has received 11 348 calls from the public, 1474 of which were from regional and remote areas.[152]

4.153 The NBN Co noted that PIM is a major undertaking and a core activity. The PIM will inform more than 13 million premises until the NBN rollout

148 NBN Co: *Submission 2.4*, p. 10; Mr Quigley, Transcript of Evidence, Canberra, 13 October 2011, p. 1.

149 NBN Co, S*ubmission 2.5*, p. 7.

150 NBN Co, *Submission 2.4*, p. 7; Mr Quigley, Transcript of Evidence, Canberra, 20 September 2011, pp. 7, 8.

151 NBN Co, *Submission 2.4*, p. 7.

152 NBN Co, *Submission 2.5*, p. 13.

is complete. Further details of these activities are still the subject of discussions among NBN Co, the Government, and industry stakeholders.[153]

4.154 A wide range of issues have already been raised with NBN Co as it engages with stakeholders across the country, including the timing of the rollout, what actions property owners need to take and the benefits of the NBN. The NBN Co seeks to deal with issues during consultation sessions and, where appropriate, has made contact after events with people who have raised issues.[154]

4.155 The NBN Co employees have visited or talked with representatives from 'hundreds' of communities across Australia. These have included small meetings in Aboriginal communities through to large national conferences. The NBN Co has also consulted with national peak bodies, such as the National Farmers' Federation, the Australian Local Government Association and the Broadband Today Alliance. These discussions have covered all aspects of the NBN rollout, and what it can mean to communities.[155]

4.156 Community information sessions have been held in the following locations in Tasmania:

- Triabunna on 14 May 2011.
- Sorell on 15 May 2011.
- Deloraine on 6 August 2011.
- Kingston Beach on 2 July 2011.
- George Town on 24 September 2011.
- South Hobart on 29 October 2011.[156]

4.157 Attendance at these sessions varied, but ranged from approximately 200 to 350 people for most sessions. Discussion covered a range of issues relating to the timing and other aspects of the rollout, and the capabilities of broadband more generally.[157]

4.158 On 18 October 2011, an NBN Co media release advised the 'public education activity' will be launched 'next year':

153 NBN Co, *Submission 2.4*, p. 10.
154 NBN Co, *Submission 2.4*, p. 9.
155 NBN Co, *Submission 2.5*, p. 6.
156 NBN Co, *Submission 2.5*, p. 6.
157 NBN Co, *Submission 2.5*, p. 6.

> ...to explain what the rollout will mean for every Australian, how to connect to the network and why it is important that the nation upgrades its telecommunications infrastructure.[158]

4.159 The media release also announced the rollout of the NBN network for 28 new locations, passing 485 000 premises, where construction is expected to commence over the next 12 months. This schedule will be updated quarterly to include additional locations. Early in 2012, the NBN Co will release a three-year 'indicative view' of the rollout that will be updated annually until the anticipated completion of the rollout, in ten years' time.[159]

Consultations in the Broken Hill region

4.160 Evidence taken at Broken Hill repeatedly demonstrated the need and wishes for reliable, fast broadband to improve education, health, employment, economic development, local government and businesses in the region. Unfortunately, this evidence also seemed to reveal the limits of NBN Co's engagements with organisations and businesses in the region, and the confusion about the RBBP.

4.161 For example, RDFW said that it had contact with NBN Co for 'general consultation in the region for over a year'. RDFW stated that there had been two public consultations in Broken Hill in May and June 2010, focussing on education and the regional business community respectively. These sessions were followed up by a technology evening. After several attempts to contact NBN Co, in July 2011, RDFW was still waiting to find out when the Mildura-Broken Hill cable would be switched on.[160]

4.162 The Perilya mine had received 'next to zero feedback' in its attempts to establish when fibre would be available.[161]

4.163 The Mayor of Central Darling Shire Council said that there had been no engagement with the NBN Co on NBN rollout in the area and that the Council did not expect to be linked to the NBN in the early stages. The council was uncertain whether the area would be connected by fibre, wireless or satellite to the NBN.[162]

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158 NBN Co, 'NBN Co releases 12-month national rollout plan', *Media Release*, 18 October 2011.

159 NBN Co, 'NBN Co releases 12-month national rollout plan', *Media Release*, 18 October 2011.

160 Mrs Nadge, RDFW, Transcript of Evidence, Broken Hill, 27 July 2011, pp. 20, 21.

161 Mr Duggan, Perilya Broken Hill, Transcript of Evidence, Broken Hill, 27 July 2011, p. 22.

162 Mayor Brown, Central Darling Shire Council, Transcript of Evidence, Broken Hill, 27 July 2011, p. 21.

4.164 The General Manager, Broken Hill City Council, Mr Frank Zaknich stated that, although the backhaul was expected to be completed in Broken Hill by September 2011, beyond that the Council had no indication or expectation supported by any information from the NBN Co.[163]

Digital Divide

4.165 The Australian Communications Consumer Action Network (ACCAN) referred to a study by the Australian Communications Management Authority (ACMA) that showed that 2.6 million Australians did not have access to the internet, either via mobile phones or a fixed service at home. This study also showed that, of the people studied:

- 62 per cent of the total had incomes of less than $25 000 per year.
- 53 per cent were aged 55 years or more.
- Most lived in rural or remote areas.
- One third accessed the internet outside their homes.
- Forty-two per cent reported that cost was a factor, and that connecting the internet at home was too expensive.[164]

4.166 The Asia Pacific Consulting Group (APCG) stated that the digital divide in Australia is economic, not geographic. The APCG's submission put the view that higher socioeconomic groups will embrace the NBN because:

- They will recognise productivity benefits: information, savings of time, inclusion, access to retail opportunities.
- There is an attractive cost/benefit trade-off.
- Their rapid adoption of ADSL, mobile phones and dial-up.[165]

4.167 The APCG believed that the take-up of the NBN is likely to be magnified in favour of the higher socioeconomic households and discriminate against lower socio-economic households. The NBN may not be as positive for the latter because costly pricing programs may limit

163 Mr Zaknich, Broken Hill City Council, Transcript of Evidence, Broken Hill, 27 July 2011, p. 31.

164 Ms Teresa Corbin, Chief Executive Officer, Australian Communications Consumer Action Network (ACCAN), Transcript of Evidence, Sydney, 25 October 2011, p. 16. ACCAN is the peak body representing consumers on telecommunications, broadband and emerging new communications services.

165 Asia Pacific Consulting Group (APCG), *Submission 22*, pp. 1, 3.

participation and further marginalise them. There will, therefore, be a greater challenge for the NBN to create benefits for such households, because:

- The productivity benefit is not easily identified, e.g. time savings compared with the access costs.
- The cost/benefit trade-off is likely to be challenging in difficult economic circumstances.
- Their adoption of ADSL, mobile phones and dial-up is slower.[166]

4.168 The APCG noted that households at the top income levels have 'consistently high' rates of broadband access, regardless of whether they are metropolitan, regional or remote. The APCG also observed that regional and remote households with higher income levels have higher rates of broadband access than lower income metropolitan households.[167]

4.169 The APCG noted that, where funds were available, there was a willingness to purchase broadband. Investment in broadband by some regional and remote households becomes 'a natural part of existence.' While speed is a 'major concern' to all users, the gains in speed in moving from dial-up to broadband was such that most consumers are willing to make the investment, and suggested, the satellite option was also 'gaining traction.'[168]

4.170 The APCG suggested that there would be differences between income groups in their approach to fast broadband. Households with the highest incomes 'would be interested' in 100 Mbps and while they could afford to pay for it, the APCG believed that 'only a minority' would be likely to use the full bandwidth regularly. The next income level would be interested in faster bandwidth, but may see 30 to 50 Mbps as satisfactory and affordable. Lower income households do not need, and could not afford, 100 Mbps, and are likely to be satisfied with inclusion at current speeds at lower price points.[169]

4.171 The APCG recommended the establishment of a 'basic broadband account', similar to public transport concession and seniors' cards. Such an

166 APCG: *Submission 22*, p. 3; Mr Gill, Director, Transcript of Evidence, Sydney, 24 October 2011, p. 32. Households with lower broadband takeup can be characterised as having lower incomes and levels of education, single parents, Aboriginal background and recipients of some types of welfare: APCG, *Submission 22*, p. 2.

167 APCG, *Submission 22*, p. 4.

168 APCG, *Submission 22*, p. 4.

169 APCG, *Submission 22.1*, p. 2.

account would need to be a simple card; means tested and designed to promote inclusion.[170]

4.172 The ACCAN noted that there had been 'a lot of statements about affordability' of the NBN. The ACCAN believed that ICT affordability was not about cheap services, but about making sure that the digital divide was not increased, especially for people on low incomes. The ACCAN believed that internet access is 'a practical necessity in daily life.'[171]

4.173 The ACCAN's assessment was that entry level offers for access to the NBN would be comparable to what is currently available, and that download speeds would improve. If people have problems affording the Internet now, these would 'probably' continue under the NBN. The ACCAN stated that 15 per cent of people chose to have a mobile service only, but it did not provide a breakdown of why those people made that choice. The ACCAN believed that 'a significant proportion' of those people had only mobile services because of cost.[172]

4.174 The ACCAN was interested in developing a 'broadband low income measures scheme', somewhat like the low income measures for phone services that Telstra is required to provide. Such a scheme could involve NBN Co providing a discounted wholesale price to RSPs who would then retail a cheap internet service targeted at low income earners. Under this proposal, people with health care cards, for example, would be able to access these services.[173]

4.175 As well as special price packages, the ACCAN's proposed broadband low income scheme included the provision of public access points especially for people with lower incomes. There is a need for a greater understanding about where such access points are used.[174]

4.176 The ACCAN noted that, after the rollout of the NBN, the home line budget service would continue at the current price. Expansion of services for low income consumers would allow them to choose a supplier, where at present they have to go to Telstra for access to benefits.[175]

4.177 The ACCAN also noted that it receives demands for information about the NBN. The response to a guide it has prepared demonstrated 'a great hunger' for clear information, and it has been observing NBN Co's plans

170 APCG: *Submission 22*, p. 3; Mr Gill, Transcript of Evidence, Sydney, 24 October 2011, p. 31.
171 Ms Corbin, ACCAN, Transcript of Evidence, Sydney, 25 October 2011, p. 15.
172 Ms Corbin, ACCAN, Transcript of Evidence, Sydney, 25 October 2011, pp. 15, 16.
173 Ms Corbin, ACCAN, Transcript of Evidence, Sydney, 25 October 2011, p. 15.
174 Ms Corbin, ACCAN, Transcript of Evidence, Sydney, 25 October 2011, p. 17.
175 Ms Corbin, ACCAN, Transcript of Evidence, Sydney, 25 October 2011, p. 18.

for a public information campaign. There are clearly matters of importance to consumers that are 'not very well explained, so that, at present, most of the public lack important information.[176]

4.178 In February 2011, the ACCAN had raised with NBN Co a proposal for a quarterly, high level consumer round table including peak bodies of consumers and end users. The ACCAN was 'keen' to establish such a body, because of the preparations for the public education campaign. The ACCAN believed that it had 'significant expertise' in this area and wanted to participate in the development and rollout of that campaign to ensure that it was managed effectively.[177]

Concluding Comments

4.179 The NBN's importance for regional and remote Australia is so great that the committee believes it is necessary to draw attention to issues that have been raised, including some that were included in the First Report.

Benefits for Regional and Remote Australia

4.180 The committee was impressed by evidence taken at Broken Hill, particularly about likely benefits for that region from the NBN. Several organisations emphasised the technological disadvantages under which people in the region live and work, providing valuable insights into potential benefits from the NBN for regional and remote Australia.

4.181 Potential benefits in health and education, especially in remote and regional Australia, have been expressed to the committee many times already in this review process. Such expressions were often tempered, for example, by uncertainties about the timing and likely quality of both interim and permanent satellite services.

Satellite Services

4.182 A number of issues are yet to be resolved about the provision of satellite services, including:

- The reliability of these services in differing climatic conditions.

176 Ms Corbin. ACCAN, Transcript of Evidence, Sydney, 25 October 2011, p. 19; Mr Jonathan Gadir, Senior Policy Adviser, ACCAN, Transcript of Evidence, Sydney, 25 October 2011, p. 19.

177 Ms Corbin, ACCAN, Transcript of Evidence, Sydney, 25 October 2011, pp. 15-16.

- The priority to be given to the 7 per cent of users who will receive fixed wireless or satellite services.
- The timing of access to this service for regional and remote communities.
- Any processes to enable these services to be replaced by fixed wireless or fibre technologies.

Government Readiness for the NBN

4.183 While the committee is aware that its development is not complete, limited information was available on subjects such as Government readiness for the NBN.

4.184 The POAAL presented a case for the extension of EPOS facilities to small LPOs that, because of insufficient transactions, are prevented from installing them. It would undoubtedly assist small communities if their post offices were able to provide a comprehensive range of services. The committee is aware of the importance to their local communities of small LPOs but, just as these are restricted by local commercial realities, so AustPost must consider the potential to upgrade these facilities at each location.

Extending the Fibre Footprint

4.185 Communities are understandably interested to know when the NBN will be connected in specific areas. The committee notes the NBN Co's view that costing of extensions to the NBN rollout divert valuable resources from planning the overall rollout, and that it would only provide costing for locations close to its rollout via a 'properly defined process'. Such a process does not yet seem to have been addressed. The committee believes that it would assist both NBN Co and interested parties if an effective process were to be defined and publicised widely.

Community Consultations

4.186 The committee noted NBN Co's plans for community consultations, and the material subsequently provided by NBN Co on its PIM activities. It believes that, at least until July 2011, NBN Co's consultations with organisations in the Broken Hill region were deficient. This was demonstrated by the confusion between the rollout of the Network and the RBBP.

4.187 The committee notes NBN Co's advice that this confusion has been resolved, but is concerned that similar confusions may have arisen, or may

arise in the future, in other regional and remote communities. The release of the 12-month rollout plan, and the three-year indicative view of the rollout, may reduce uncertainty in some areas.

4.188 Comments by the ACCAN about the lack of important information about the NBN support the committee's concerns about the lack of consultation by NBN Co, and the need for an effective public education program.

4.189 The NBN Co stated that it has plans to inform communities about the Network 'prior to, during and after' its rollout. The NBN Co must have been aware of confusion about the rollout of the Network in some regional and remote communities. The committee is concerned that there will be more unnecessary, and perhaps widespread, confusion if detailed and appropriate plans for consultations are not devised and released promptly, especially for remote and regional communities. To this point in the rollout, there seems to have been more planning than action in this important area of NBN Co's operations.

4.190 The release of the 12-month national NBN rollout plan in October 2011, in addition to the public education program (to be launched in 2012), show that the NBN Co is undertaking activities that, perhaps belatedly, will provide basic information about the rollout. The committee believes that it is regrettable that more information was not provided to communities earlier in the rollout process. While it would probably have been subject to changes for operational reasons, earlier publication of a program of consultations would have been useful, especially for remote and regional communities.

Digital Divide

4.191 Ensuring that lower socioeconomic groups have access to the NBN does not seem to have received the attention it deserves, and needs. Choosing between a basic broadband account or a broadband low income measure may not be the only or the best way of ensuring that lower socioeconomic groups have increased access to the NBN. The committee believes, however, that increasing the access of such groups to the services to be provided by the NBN requires attention early in the rollout.

4.192 Such a scheme may be the only way to make adequate provision for the inclusion of lower socioeconomic groups in the benefits of the NBN. Unless there is a mechanism to do this, the digital divide may increase during the rollout of the NBN.

Continuing Review

4.193 Based on the concerns set out above, the committee intends to include the following issues in its continuing review of the rollout of the NBN:

- The provision of satellite services, interim and long term, to regional and remote Australia.
- The adequacy of Government preparations for use of the NBN to deliver services to the community.
- The policy and process for extending the NBN fibre network.
- The adequacy of NBN Co's consultations and its public education campaign, especially in regional and remote areas, during the rollout of the NBN.

Recommendation 3

4.194 **The committee recommends that, as a matter of urgency, the NBN Co formalise and publicise its policy for the provision of costing extensions to its planned National Broadband Network fibre footprint, especially for regional and remote Australia.**

Recommendation 4

4.195 **The committee recommends that NBN Co:**

- **finalise and publicise its plans for community consultation with regional and remote Australia;**
- **in its report to the committee include:**
  - ⇒ **details of the progress of its consultation plans;**
  - ⇒ **issues raised; and**
  - ⇒ **numbers of participants.**

Recommendation 5

4.196 **The committee recommends that the Department of Broadband, Communications and the Digital Economy and the NBN Co:**

- **undertake a study of methods to improve access for low income households and other disadvantaged groups to the National Broadband Network and report its findings to the committee;**
- **in conducting the study, include examination of community proposals for measures which would support a basic broadband account and a broadband low income measure scheme.**

Robert Oakeshott MP
Chair

22 November 2011