

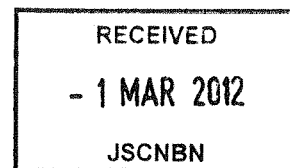


SENATOR THE HON PENNY WONG
Minister for Finance
and Deregulation

SENATOR THE HON STEPHEN CONROY
Minister for Broadband, Communications and
the Digital Economy

29 FEB 2012

Mr Rob Oakeshott MP
Chair
Joint Committee on the National Broadband Network
PO Box 6022
Parliament House
CANBERRA ACT 2600



Dear Mr ^{Rob}Oakeshott

We present to you the government's response to the first report of the Joint Committee on the National Broadband Network, *Review of the Rollout of the National Broadband Network*.

As you will appreciate, the National Broadband Network (NBN) is a rapidly evolving project. NBN Co recently released an update to its 12-month national rollout schedule, listing the communities in each state and territory where work on the fibre network will begin before December 2012. NBN Co is on track to release its first three-year indicative national rollout plan early this year. Further to this NBN Co is progressing the long term satellite solution by entering into an agreement with Space Systems/Loral for the delivery of two new broadband satellites in 2015. The long term satellite service will build on the interim satellite service, which was launched on 1 July 2011 and is today providing access to enhanced broadband for Australians in rural and remote areas.

Since finalising the government response to the Committee's first report, a number of key developments around the rollout of the NBN have taken place. The following reflect progress made since finalising the Government's response to the Committee's recommendations:

- Following Telstra signing the Wholesale Broadband Agreement, on 27 February 2012 Telstra released their first series of bundled plans that are NBN ready. Telstra's NBN plans start from \$49.95 per month for a broadband service with 50GB of data when combined with a Telstra home phone plan. Telstra has also committed to providing its existing suite of voice-only plans on the NBN, including the Homeline Budget, which costs \$22.95 per month for those wanting a voice only service. The government looks forward to more service providers releasing competitive pricing for broadband and voice-only services.

- On 28 February 2012 the ACCC accepted Telstra's Structural Separation Undertaking (SSU) and draft Migration Plan. The separation of Telstra's copper customer access network and its hybrid fibre-coaxial network will be achieved through the progressive migration of customer services to the wholesale-only NBN. This means for the first time in Australia's history, telecommunications providers will compete on a level playing field. The ACCC's acceptance of the SSU is one of the last hurdles in the finalisation of the Definitive Agreements between NBN Co and Telstra that will advance the rollout of the NBN.

We trust this information will be of assistance and welcome the Joint Committee's continued interest in this important infrastructure project.

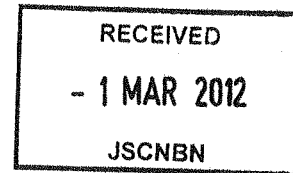
Yours sincerely



Penny Wong
Minister for Finance
and Deregulation



Stephen Conroy
Minister for Broadband,
Communications and the
Digital Economy



Australian Government

Joint Committee on the National Broadband Network

Review of the Rollout of the National Broadband Network

First Report

Australian Government Response to the Committee's First
Report of 31 August 2011

February 2012

INTRODUCTION

In March 2011 the Parliament established the Joint Committee on the National Broadband Network (the Committee) to enable the ongoing parliamentary scrutiny of all aspects relating to the rollout of the NBN. The Committee is required to report to the Parliament on the rollout of the NBN on a six monthly basis until the completion of the project.

The Committee has been asked to provide progress reports on:

- the rollout of the NBN;
- the achievement of take-up targets as set out in NBN Co Limited's (NBN Co) Corporate Plan;
- network rollout performance including service levels and faults;
- the effectiveness of NBN Co in meeting its obligations as set out in its Stakeholder Charter;
- NBN Co's strategy for engaging with consumers and handling complaints;
- NBN Co's risk management processes, and
- any other matter pertaining to the NBN rollout that the Committee considers relevant.

The Committee's first report was informed by four public hearings held in a number of locations throughout Australia, and public consultation which attracted twenty one submissions and eleven exhibits. As part of the review the Committee also conducted two infrastructure inspections in Broken Hill and Melbourne on 27 and 28 July 2011. On 31 August 2011, the Committee tabled its first report, entitled *Review of the Rollout of the National Broadband Network*. The report made five recommendations ranging across: future reporting arrangements; government readiness to take advantage of the NBN; the impact of the Definitive Agreement process on timing of the rollout; the expected productivity, jobs and competitive benefits of the NBN; and timeframes for regional and remote rollout and satellite service levels. The Committee has since released its second report on the rollout of the NBN to the Parliament on 24 November 2011, to which the government will provide a separate response.

BACKGROUND

The Australian Government believes that access to affordable, high-speed broadband is increasingly essential to the way Australians communicate and do business. It will help drive productivity, improve education and health service delivery and connect our cities and regional centres.

The Australian Government has established NBN Co to design, build and operate a new high-speed NBN. The NBN will be the single largest infrastructure investment made by an

Australian Government and will be accompanied by historic reforms to the telecommunications sector. The NBN is about more than having a faster internet connection. The productivity gains associated with this investment will mean that the full benefits will continue to flow for decades beyond the completion of the project.

NBN Co's central objectives, as set out by the government are to:

- deliver significant improvements in broadband service quality to all Australians
- address the lack of high-speed broadband in Australia, particularly outside metropolitan areas, and
- reshape the telecommunications sector.

In implementing the government's policy initiative, NBN Co's specific objectives include:

- providing access to broadband to 100 per cent of Australian addressable premises
- connecting 93 per cent of homes, schools and businesses with a high-speed fibre network capable of providing NBN Co's retail service provider customers with download speeds of up to 100 megabits per second (Mbps)* at the wholesale level. As outlined in the Statement of Expectations, the government expects NBN Co to upgrade the NBN. NBN Co expects future services over the upgraded fibre network to enable wholesale download speeds of up to 1 gigabit per second (Gbps) within the fibre footprint
- serving all remaining premises by a combination of leading edge fixed-wireless and satellite technologies capable of providing NBN Co's retail service provider customers with peak download speeds of up to 12 Mbps at the wholesale level*
- establishing a wholesale-only, open-access network, subject to Australian Competition and Consumer Commission (ACCC) scrutiny, to support the government's objective of structural market reform
- offering open and equivalent access to wholesale services via Layer 2 bitstream services, which in time will help enable multi-operator delivery of data, voice and video services
- charging retail service provider customers uniform national wholesale pricing within technologies and uniform national entry level pricing across technologies consistent with the government objective of providing uniform national wholesale prices. Where new technologies become available, NBN Co will seek to maintain this principle.

The NBN will be Australia's first national, wholesale-only, open access broadband network offering equivalent terms and conditions to all access seekers. This means NBN Co will roll out the network and sell wholesale services to retail service providers, who will then provide services to end users. This represents a significant structural change in the telecommunications industry and will support vibrant retail competition. The NBN will be built and operated on a commercial basis, at arm's-length from government, by NBN Co.

AUSTRALIAN GOVERNMENT RESPONSE

The Australian government has considered the Committee's first report and provides the following response to the recommendations.

Recommendation 1

The committee recommends that the NBN Co together with the Department of Broadband, Communications and the Digital Economy, commencing for the first quarter 2011-2012, provide a six-monthly report on the progress of the rollout of the National Broadband Network, using established Key Performance Indicators and performance measures, no later than three months before the committee is due to report to the Parliament.

The government supports this recommendation and submitted its first report to the Committee on 23 September 2011.

The government will submit six-monthly reports to the Committee and adopt this reporting pattern on an ongoing basis. The reports will provide quantitative and qualitative advice outlining NBN Co's key performance information across the following areas:

- progress on the rollout
- deployment and installation
- take up rates
- key financial information: profit and loss statement; balance sheet; cash flow statement; and cash flow reconciliation
- quality of service including service levels and faults
- industry and consumer consultation including complaint handling
- issues associated with health, safety and environment.

The information provided to the Committee will become more meaningful as the rollout progresses and more premises are connected and as NBN Co's operating and business systems come online during 2012.

Recommendation 2

The committee recommends that Government agencies take measures to ensure they are ready for the rollout of the National Broadband Network (NBN), prior to receiving and working with the NBN for service delivery.

The government supports this recommendation.

The government outlined its vision for the NBN-enabled digital economy in its release of the National Digital Economy Strategy, including the goal that by 2020, four out of five Australians will choose to engage with the government through the internet or other type of online service.

Significant progress is already being made in Australia to expand delivery of government services and programs online. Recently, the government released a draft Strategic Vision for Information and Communications Technology (ICT) that outlines a long term plan for the government's use of ICT to support increased public sector productivity.

The Strategic Vision for ICT and its implementation will include measures to ensure that government agencies are ready for the rollout of the NBN.

In addition to this the government has announced several new initiatives to advance the digital economy goals outlined in the National Digital Economy Strategy. A number of these initiatives relate to government services delivery including:

- **Whole of Government Service Delivery Reform** - the government is undertaking investigation and testing of some preliminary developments to improve people's ease of use and access across government services. The government will examine service delivery reforms that will enable individuals to manage their government transactions and personal information via a single on-line account and provide the basis for a range of new services. It is expected that the NBN will allow greater flexibility and long-term adoption of innovative interactive experiences between the public and government that can be linked to Whole of Government Service Delivery Reforms.
- **Service Delivery Reform** - to ensure government service delivery is modern and flexible, the government has committed to Service Delivery Reform initiatives within the Human Services portfolio that will transform the way people receive services and interact with government. Over time, this work may leverage the NBN through the increased use of real-time interactive customer service tools, including, for example, using the voice-over the internet protocol (VOIP) and high-definition video conferencing to access services in regional and remote areas of Australia.
- **Digital Local Government program** - to assist local governments to deliver innovative online services - in particular to homes and businesses, the Digital Local Government program will provide funding to local governments in communities that

first benefit from the NBN. The program encourages the development of online services that are repeatable and scalable, and that other local governments across Australia can adapt for their purposes.

- **Telehealth Trials** - to support Australia's health system to effectively integrate digital technologies and broadband-delivered services to drive efficiency, improve patient outcomes and temper the rate of growth in hospital and other admissions, the government will conduct two Telehealth trials. One trial will occur in Armidale and Kiama and focus on the delivery of high-quality NBN-enabled telehealth services to older Australians living at home with chronic medical conditions. The other trial will be conducted in Townsville and will deliver high-quality monitoring and video-conferencing services to people suffering type 2 diabetes.
- **NBN Enabled Telehealth Pilots Program** – to support the provision of high quality health care services, particularly aged care, cancer care and palliative care services, utilising NBN-enabled telehealth services to the home. By providing better access to health services to homes within NBN early release sites, this \$20.6 million program will investigate and demonstrate opportunities for the extension of telehealth services in the future and the business case for doing so.
- **NBN Regional Legal Assistance program** - to demonstrate the ability of NBN-based collaborative activities to strengthen and improve access to legal assistance services for people living in regional Australia and support professional staff delivering these services.
- **NBN-Enabled Education and Skills Services program** - to support the goal of expanded online education, the four year \$27.2 million NBN-enabled education and skills services program will support the development and trialling of innovative online and interactive education and skills services that take advantage of the high-speed broadband connections made available through the NBN. This program will contribute to the development of services that connect teachers and learners to increase access to information and enhance collaboration; to address skills shortages, and improve teaching and learning experiences as well as improving professional development, enhancing community links, and facilitating workplace training to improve workplace productivity. This program is complemented by the work undertaken through the Australian Flexible Learning Framework with \$1 million provided to support the development of NBN e-learning programs.

Recommendation 3

The committee recommends that NBN Co Limited publish a detailed account of impacts on timing and cost of the National Broadband Network as a result of the time taken and resources used to complete the Binding Definitive Agreements between NBN Co and Telstra and NBN Co and Optus, and the decision to increase the number of Points of Interconnect from 14 to 121.

The government notes this recommendation.

The Definitive Agreements between NBN Co and Telstra and NBN Co and Optus are currently being scrutinised by the ACCC and are therefore not yet finalised.

At the time that NBN Co's 2011-2013 Corporate Plan was finalised, there were a number of issues which – due to their complexity – had implications that could not fully be anticipated. These issues included the time needed to finalise the Definitive Agreements, the impact of the government's acceptance of the agreement between NBN Co and the ACCC to have 121 points of interconnect and the suspension of the construction tender process.

While the agreement with Telstra was extremely complex and took longer than first anticipated, the government is confident that these agreements will protect the interests of Australian taxpayers and support the NBN rollout by providing access to existing infrastructure, minimising overhead cabling and reducing the overall costs of the NBN. Further, NBN Co will proactively manage the construction timetable over the life of the project to minimise and overcome any delays.

In line with *Commonwealth Government Business Enterprise Governance and Oversight Guidelines (October 2011)*, NBN Co is required to submit a corporate plan to Shareholder Ministers each year. NBN Co is currently developing its second Corporate Plan 2012-15 which will take into account any impact there may be on the timing and cost of the NBN as a result of agreements with Optus and Telstra and other factors.

Following the finalisation of the agreements the government will consider the recommendation, but notes that any decision to publish details of the impacts would need to be taken following finalisation of the ACCC consideration and take into account the extent to which the legitimate commercial interests of parties, including Telstra and Optus would be compromised by publication.

Recommendation 4

The committee recommends that the Minister for Broadband, Communications and the Digital Economy publish a detailed statement outlining the productivity, jobs and competitive benefits of:

- the overall rollout of the National Broadband Network for the cost-efficient provision of basic broadband infrastructure for all Australians;
- how competitive markets will operate at the wholesale and retail levels, with particular reference to the impact on small, existing internet service providers and other fibre deployment companies; and
- the impact on wholesale and retail competition of the increase of the Points of Interconnect from 14 to 121.

The government supports this recommendation in principle and this Statement outlines those productivity, jobs and competitive benefits of the NBN. It also provides comments on how competitive markets will operate at the wholesale and retail levels, and summarises the impact on competition of the increase of Points of Interconnect from 14 to 121.

The NBN will give 100 per cent of Australian addressable premises access to high-speed* broadband and will provide the enabling infrastructure to support Australia becoming one of the world's leading digital economies by 2020. High-speed* broadband will be available to 93 per cent of Australian homes, school and business premises via fibre to the premises technology; the remaining 7 per cent of premises will be connected via a combination of leading edge fixed-wireless and satellite technologies. This represents a significant step change over broadband speeds currently experienced by users of this technology today.

The establishment of NBN Co to build and operate a National Broadband Network followed a decision by government to terminate the NBN Request for Proposals (RFP) process. The government conducted a robust open competitive process in accordance with the requirements of the RFP [and the Commonwealth Procurement Guidelines], which included rigorous analysis and evaluation of proposals, with the aim of selecting a preferred proponent to build and operate the NBN. The decision to terminate followed advice from the panel of experts that none of the national proposals submitted offered value for money for the Commonwealth against the criteria set out in the RFP. The government decided that as the private sector was unable to provide an acceptable solution for Australia's broadband needs, the government would establish NBN Co to build and operate the NBN and provide the infrastructure the economy was demanding.

With the release by NBN Co of its first 12-month construction timetable on 18 October 2011 the NBN is rapidly moving to realise tangible benefits for productivity, jobs and competition:

- NBN services are currently available in eight communities

- NBN construction is underway in 19 communities
- The 12-month plan identified 49 locations, 28 of which were new, covering approximately 485,000 premises across all states and territories where construction is expected to commence before September 2012 – with a further 63 500 premises included for where the rollout is already underway.

To remain competitive in our region as the world moves to a 21st century digital economy, Australia needs to maintain the momentum and make this investment.

The most recent OECD statistics (for June 2011) indicate that Australia is ranked 21st out of 34 countries in terms of its number of fixed broadband subscribers per 100 inhabitants.¹

Other OECD statistics indicate that Australians pay more for broadband than most other OECD countries. Regarding average subscription prices (as at September 2010), Australia is:

- 3rd most expensive for low-speed connections (out of 24 countries),²
- 14th most expensive for high-speed connections (out of 33 countries),³ and
- 12th most expensive for very high-speed connections (out of 28 countries).⁴

These OECD statistics are further evidence that Australia cannot afford not to reform industry structure and infrastructure.

The demand for higher bandwidth will continue to grow. Cisco estimates that Australia's internet traffic will grow six-fold by 2015.⁵ This is a compound annual growth rate of 41 per cent. Cisco says that:

‘When coupled with the Government’s National Digital Economy Strategy, the results reveal that Australia is on the verge of a substantial evolution in how new jobs, businesses and even new public services will be enabled by a broadband-enabled economy’ (News Release - Cisco Visual Networking Index Forecast (2010–2015), 9 August 2011).

¹ OECD Broadband Portal, Chart 1d. Fixed and wireless broadband subscriptions per 100 inhabitants, June 2011, see http://www.oecd.org/document/54/0,3343,en_2649_34225_38690102_1_1_1_1,00.html

² OECD Broadband Portal, Chart 4f. Average monthly subscription price for connections below 2.5 Mbps with/ without line charge, September 2010, see http://www.oecd.org/document/54/0,3343,en_2649_34225_38690102_1_1_1_1,00.html#prices

³ OECD Broadband Portal, Chart 4h. Average monthly subscription price for connections between 15 and 30 Mbps with/ without line charge, September 2010, see http://www.oecd.org/document/54/0,3343,en_2649_34225_38690102_1_1_1_1,00.html#prices

⁴ OECD Broadband Portal, Chart 4j. Average monthly subscription price for connections faster than 45 Mbps with/without line charge, September 2010, see http://www.oecd.org/document/54/0,3343,en_2649_34225_38690102_1_1_1_1,00.html#prices

⁵ Australia to See Internet Grow Six-Fold by 2015 – What's the Productivity Payoff?, see <http://newsroom.cisco.com/press-release-content?type=webcontent&articleId=454121>

The latest Australian Bureau of Statistics figures indicate that fixed line networks carried 93 per cent of the data downloaded over the internet in Australia in June 2011 and fixed line downloads grew by 79.7 per cent over the 12 months between June 2010 and June 2011.⁶ Our telecommunications systems are increasingly relying on fixed networks to do the heavy lifting in a high growth operating environment.

The UN Broadband Commission Report released on 6 June 2011 states:

‘Developing isolated projects or piecemeal, duplicated networks is not only inefficient, it delays provision of infrastructure that is becoming as crucial in the modern world as roads or electricity supplies’.⁷

The Chief Executive of Singapore Telecommunications was reported in The Australian (10 June 2011) as supporting the competitive opportunities arising with the NBN:

‘If you look at NBN in Australia, that presents an excellent opportunity for a fixed communications network ...with NBN, which will be an open access network, I think you will be able to see the entire fixed telecommunications industry reshaped and I think you’ll see more competition and a lot more innovation, and with that, improved productivity for businesses and added convenience for consumers’.⁸

Productivity benefits

The NBN is a key nation-building project; it will help drive Australia’s productivity in business, education, health, and government service delivery; and improve social inclusion through fast and reliable broadband services to our cities, regional centres and rural communities.

The NBN will play a significant role in enabling new ways of doing business, participating in work, gaining an education and access to services across regional Australia and in our economy as a whole.

In a recent paper *‘Business Innovation and the Use of Information and Communications Technology’*, the Australian Bureau of Statistics has analysed the effects of sophisticated information and communications technology use – which is reliant on reliable high-speed broadband – on business growth and productivity. It has concluded:

‘Business innovation is regarded as a key determinant of both individual business success and national economic growth. At the micro level, business innovation has

⁶ Australian Bureau of Statistics, 8153.0 - Internet Activity, Australia, June 2011, see <http://www.abs.gov.au/AUSSTATS/abs@.nsf/DetailsPage/8153.0June%202011?OpenDocument>

⁷ Broadband: A platform for progress – A Report by the Broadband Commission for Digital Development http://www.broadbandcommission.org/Reports/Report_2.pdf

⁸ The Australian, 10 June 2011, ‘SingTel backs government’s NBN rollout’, p.23 <http://www.theaustralian.com.au/archive/business-old/singtel-backs-governments-nbn-rollout/story-e6frg9hx-1226072626611>

the potential to increase consumer demand through improved product or service quality and simultaneously decrease production costs. At the macro level, strong business innovation can increase multifactor productivity, thus lifting international competitiveness, economic growth and real per capita incomes. It is thus of great interest to businesses and policy makers to identify those factors which stimulate innovation and to understand how these factors interact.

We expect that ICT plays an important role as a source of business innovation because it enables closer communication and collaboration between the business and other organisations, allowing businesses to more quickly exploit opportunities for innovation. It also provides a platform from which businesses can build innovations, and provides significant efficiency gains. We find strong evidence that businesses which use ICT more intensely are more likely to innovate and furthermore, develop more types of innovation and also more novel innovations'.⁹

The NBN will enable households to access a range of online services and participate in a range of activities simultaneously. Evidence shows that households are continuing to increase the amount of data that they consume, with the recent Australian Bureau of Statistics Internet Activity Survey as at 30 June 2011¹⁰ showing there is strong and growing demand from Australians for broadband services. Evidence for this includes:

- Australians are quick to take up technology, with access for household and business internet connections increasing an estimated 80 per cent over 2007 -2010, and use of the internet by households, business, and government more than doubling over the same period,¹¹
- Australians continue to embrace the digital economy with the increasing adoption of social media. During June 2011, approximately 8.6 million Australians accessed social networking and user-generated content sites from home, this compares to under 8 million during June 2010,¹²
- Australia has demonstrated a high level of broadband adoption by businesses compared to the OECD average; with 90 per cent of businesses with 10 or more employees having a broadband connection in 2007 (OECD 2010),¹³

⁹ Australian Bureau of Statistics – *Business Innovation and the Use of Information and Communications Technology* – March 2011, p.3, see <http://www.abs.gov.au/AUSSTATS/abs@.nsf/DetailsPage/1351.0.55.033Mar%202011?OpenDocument#Publications>

¹⁰ Australian Bureau of Statistics, 8153.0 - Internet Activity, Australia, June 2011, see <http://www.abs.gov.au/AUSSTATS/abs@.nsf/DetailsPage/8153.0June%202011?OpenDocument>

¹¹ Deloitte Access Economics, *The connected continent: How the internet is transforming the Australian Economy*, August 2011, p.32, see <http://www.deloitte.com/au/connectedcontinent>

¹² Australian Communications and Media Authority, *Communications Report 2010-2011*, p.164

¹³ Deloitte Access Economics, *The connected continent: How the internet is transforming the Australian Economy*, August 2011, p.34, see <http://www.deloitte.com/au/connectedcontinent>

- 79 per cent of Australian households now have access to the internet at home – with almost all of them – 6.2 million households (73 per cent), representing almost three quarters of all Australian households – having access to broadband at home. This is an increase of over one million households with broadband from the situation in 2008-09,¹⁴
- the phasing out of dial-up internet connections, with 95 per cent of internet connections now being broadband,¹⁵
- Australians continuing to access increasingly fast download speeds, with 87 per cent of access connections advertising download speeds of 1.5 megabits per second or greater,¹⁶
- the number of internet subscriptions at speeds less than 1.5 Mbps has consistently decreased between September 2006 and June 2011,¹⁷ and
- increases in the domestic market mirror global trends in international demand growth, Global IP traffic having increased eightfold over the past five years.¹⁸

The NBN will also provide opportunities and incentives for businesses to innovate in the way they provide goods and services to consumers, advertise, collaborate with business partners, and interact with customers more broadly.

As noted in the NBN Implementation Study, for Australia's small businesses (SMEs) in particular, 'fibre connectivity is a productivity enabler'.¹⁹ On 8 November 2011 NBN Co announced that 'as Australia's two million small businesses look at alternative ways to reach new markets, boost their efficiency, and cut costs ... NBN Co intends to offer telcos and internet service providers new high-speed* wholesale broadband services which telcos and internet service providers can tailor to the specific needs of the Small Office/Home Office (SOHO) and small business market' (News Release – NBN Co to offer new services to ISPs tailored to small business, 8 November 2011).

¹⁴ Australian Bureau of Statistics, 8146.0 Household Use of Information Technology Australia, 2010-11, <http://www.abs.gov.au/ausstats/abs@.nsf/mediareleasesbyCatalogue/180CCDDCB50AFA02CA257522001A3F4B?OpenDocument>

¹⁵ Australian Bureau of Statistics, 8153.0 - Internet Activity, Australia, June 2011, see <http://www.abs.gov.au/AUSSTATS/abs@.nsf/DetailsPage/8153.0June%202011?OpenDocument>

¹⁶ Ibid.

¹⁷ Australian Bureau of Statistics, 8153.0, Internet Activity, Australia, June 2011, see <http://www.abs.gov.au/AUSSTATS/abs@.nsf/DetailsPage/8153.0June%202011?OpenDocument>

¹⁸ Cisco Systems, Entering the Zettabyte Era http://www.cisco.com/en/US/solutions/collateral/ns341/ns525/ns537/ns705/ns827/VNI_Hyperconnectivity_WP.html

¹⁹ NBN Implementation Study p124 http://www.dbcde.gov.au/_data/assets/pdf_file/0020/127550/NBN-Implementation-Study-complete_report.pdf

SMEs will be particular beneficiaries of the NBN as they are currently unable to access the high-speed fibre connections available to large businesses located in Central Business Districts. SMEs will benefit from both themselves being connected to high-speed broadband as well as their Australian customers being connected to high-speed broadband.

A McKinsey Global Institute survey of SMEs in 12 countries²⁰ found that:

- SMEs utilising web technologies grew more than twice as fast as those with a minimal presence.
- On average the internet enabled a 10 per cent increase in profitability. The impact came half from increased revenues, and half from lower costs of goods sold and lower administrative costs.

The NBN will make it easier for some businesses to compete nationally, particularly in relation to projects that they would not normally compete for because it was previously geographically impractical. Increased competition is likely to deliver lower prices and other benefits to consumers.

High-speed broadband has the potential to remove barriers to online transactions and encourage more businesses and consumers to participate in online retail. A 2010 Access Economics report found that about 23 per cent of dissatisfied, and 18 per cent of dissuaded, online shoppers cite lack of speed as a factor in their dissatisfaction or failure to complete a transaction.²¹ Online retail can boost efficiencies for businesses and allow consumers to buy quality products at more affordable prices.

The NBN can also provide Australian businesses with opportunities to expand into new export markets. Businesses can set up high quality websites that act as a salesperson accepting orders and enquiries 24/7. Businesses that work with graphics, videos, animation and other digital media, which have large file sizes, can upload and send these products to their clients faster and more reliably, while businesses can also reduce IT costs by utilising emerging cloud computing technologies. These technologies will also encourage greater remote collaboration between businesses. The government has announced the following new initiative to support Australian businesses in maximising the benefits of the NBN:

- **Digital Enterprise program** – to enable more Australian businesses and not-for-profit organisations in communities which will first benefit from the NBN, particularly those located in non-metropolitan areas, to leverage the benefits of broadband-empowered online engagement. This initiative will assist these

²⁰ McKinsey Global Institute "Internet Matters: The Nets Sweeping impact on growth, jobs and prosperity", May 2011, p.17, see

http://www.mckinsey.com/mgi/publications/internet_matters/pdfs/MGI_internet_matters_full_report.pdf

²¹ Access Economics, *Household E-Commerce Activity and Trends in Australia*, 17 November 2010, p.17, see

http://www.dbcde.gov.au/_data/assets/pdf_file/0020/131951/Household_e-commerce_activity_and_trends_in_Australia-25Nov2010-final.pdf

organisations to achieve cost savings, productivity enhancements and improved marketing through greater online engagement.

The government has also set the digital economy goal that by 2020, Australia will rank in the top five OECD countries in the portion of households that connect to broadband at home. This will deliver positive benefits for Australian families and communities in the form of improved access to business and job opportunities, health, education and government services. To help reach this goal the government has announced the following new initiative:

- **Digital Hubs program** – to help more Australian households get online and to narrow the gap between Australian households and businesses in capital cities and those in regional, rural and remote Australia. Through Digital Hubs being provided in communities which will first benefit from the NBN, local residents will be able to experience the NBN and receive training to develop the digital skills necessary to participate safely and securely and have trust and confidence in the digital economy.

Evidence confirms investment in high-speed broadband delivers productivity gains. For example, *The Economic Journal* provides an estimate of the effect of broadband infrastructure on economic growth in the panel of OECD countries in 1996–2007, suggesting ‘...that a 10 percentage point increase in broadband penetration raised annual per capita growth by 0.9–1.5 percentage points’.²²

As superfast broadband penetration and use increases, and more innovative online services are developed by government agencies and the private sector, people in regional Australia will have more opportunities to access first class services delivered online to their own homes. In time, regional Australians will be accessing education, health and consumer services and employment opportunities that were previously only available to those in larger centres. The NBN will deliver economic benefits to rural and regional Australia through greater employment opportunities and better access to information and services. A 2010 Allen Consulting report found that on average a 10 per cent increase in internet connectivity increased regional output by 0.53 per cent. This is significantly greater than the 0.38 per cent increase for metropolitan areas.²³

The ubiquity of the NBN will allow addressable household and business premises in regional Australia to have access to high-speed* broadband services provided by retail service providers who can acquire wholesale services from NBN Co at a uniform national wholesale price. NBN Co proposes to deliver speeds on fibre of up to 1000 Mbps* downstream and

²² Czernich, N., Falck, O., Kretschmer, T. and Woessmann, L. (2011), Broadband Infrastructure and Economic Growth. *The Economic Journal*, 121: 505–532. doi: 10.1111/j.1468-0297.2011.02420.x

²³ Allen Consulting, *Quantifying the possible economic gains of getting more Australian households online*, November 2010. Commissioned by the Department of Broadband, Communications and the Digital Economy. p.36 http://www.dbcde.gov.au/_data/assets/pdf_file/0004/135508/Quantifying_the_possible_economic_gains_of_getting_more_Australian_households_online.pdf

400 Mbps* upstream.²⁴ In a regional sense, NBN Co has brought forward the introduction of wireless and satellite services so that regional and rural Australia can get access to better broadband as soon as possible.

- Teleworking

By establishing the NBN the government will transform the way Australians work. The NBN has the potential to widen the pool of skills and talent available to all employees by making teleworking a viable option. Proximity to a physical workplace will be less important. Access Economics has found that if 10 per cent of Australian employees were to telework 50 per cent of the time, the total annual gains from teleworking would be \$1.4-\$1.9 billion a year.²⁵

- Online education and training

The NBN fibre network will change the way our education system accesses information, collaborates and communicates, in addition to improving connections to the household for students to engage with learning institutions. Experts, academics and industry leaders are endorsing the NBN as a driver for improved learning which in turn will result in productivity benefits. For example, the Australian Information and Communications Technology in Education Committee views access to affordable high-speed broadband as essential to realising the transformative potential of ICT in education and training and hence to advancing Council of Australian Governments' wider productivity agenda.²⁶

Overseas experience is showing that online education can produce better results than traditional learning. Carnegie Mellon University's Open Learning model, for example, is resulting in as much as a 50 per cent reduction in the time it takes to learn a subject, with course completion rates twice as high.²⁷ Cornell University has established eCornell offering a wide ranging curriculum authored by an Ivy League faculty. This is just the start of an online global tertiary studies market.

A British schools study found students with broadband access in their classroom achieved better results in national tests than those without. Further to this 86 per cent of teachers believed pupils were more motivated and attentive when computers and the internet were used in class.²⁸

²⁴ NBN Co Limited, Corporate Plan 2011 – 2013, <http://www.nbnco.com.au/assets/documents/nbn-co-3-year-gbe-corporate-plan-final-17-dec-10.pdf> p. 94

²⁵ Access Economics, *Impacts of Teleworking under the NBN*, July 2010, p. lii, see http://www.dbcde.gov.au/data/assets/pdf_file/0018/130158/ImpactsofteleworkingundertheNBN.pdf

²⁶ AICTEC Submission prepared in response to the House of Representatives Standing Committee on Infrastructure and Communications inquiry into the National Broadband Network, February 2011, p.4, see http://www.aph.gov.au/Parliamentary_Business/Committees/House_of_Representatives_Committees?url=ic/nbn/subs.htm

²⁷ D. Carter, *Program goes beyond open course model*, [ecampusnews.com](http://www.ecampusnews.com/top-news/program-goes-beyond-open-course-model/), September 2009, see <http://www.ecampusnews.com/top-news/program-goes-beyond-open-course-model/>

²⁸ European Commission, *The ICT Impact Report: A review of studies of ICT impact on schools in Europe*, December 2006, p.4, see http://ec.europa.eu/education/pdf/doc254_en.pdf

This was confirmed anecdotally by Patrick Bakes, Principal of Tasmania's Circular Head Christian School in Smithton, the first school connected to the NBN. He said, 'We are finding that students are engaged, they can move from one task to another much more quickly, and they can access a range of media when they are researching...'²⁹

These benefits also apply to work-based training. The greater bandwidth capacity offered by the NBN will allow businesses to up-skill workers through participating in webinars and online forums or by watching online videos or utilising interactive or immersive technologies. Workers can engage in online learning to access specialised courses being run in different locations without the need of the financial and time cost to businesses of travel.

Online training programs can also offer unemployed jobseekers the opportunity to develop the skills and knowledge that will help them get back into the workforce faster.

- Health services

The NBN will support health reform and has the potential to raise productivity in the health sector through more timely diagnosis, treatment and monitoring of patients. Video conferencing technologies will mean that specialist doctors can assess patients in regional and rural locations without the need for time-consuming travel. Remote diagnosis and home-care may also reduce the need for people to travel to hospitals. Higher bandwidth will allow reliable, faster transfer of high definition images and videos, which will enable clinicians to collaborate and consult on diagnosis and care for their patients. Reliable and ubiquitous broadband will also facilitate better access to the personally controlled electronic health record system. eHealth and telehealth, supported by access to fast, reliable broadband, are key enablers of health reform, and essential in addressing the increasing burden of an ageing population and rising levels of chronic disease in the Australian health system.

The NBN rollout has already sparked the development of new applications in the delivery of health services. Trials are underway in a number of areas to first benefit from the NBN and include the monitoring and in-home treatment of various ailments. For example, an Australian-developed health solution that can be delivered over the NBN was showcased at the 29 July 2011 launch of the Kiama first release site. Developed by Neuroscience Research Australia (NeuRA), the application is delivered via broadband to the home and has the potential to help decrease the incidence of injury among the elderly caused by falls. The 1 September 2011 launch of the Townsville first release site also showcased ways that the NBN will provide the connectivity to allow telehealth to become part of the primary healthcare system between a patient at home and their GP in profiling an application to assist people living with diabetes.

²⁹ Case Study: Education – teacher retention, school explores new learning environments, see <http://www.nbnco.com.au/news-and-events/case-studies/case-study-education-teacher-retention.html>

- Government services

The NBN also offers significant opportunities to increase productivity and reduce costs for the delivery of government services. PricewaterhouseCoopers has found the average cost of an online transaction in the UK was £0.08 (about \$A0.12), compared to £10.53 (about \$A16) for face-to-face transactions, £3.39 (about \$A5.15) for telephone engagement and £12.10 (\$A18.40) for engagement by mail.³⁰

Video conferencing and telepresence can be used in meetings and stakeholder consultation, reducing the need for travel. Shared platforms through cloud computing could enhance the quality, timeliness and variety of government services available, as well as reducing the time and cost of government agencies developing their own platforms. Faster, more reliable broadband will also help speed up the resolution of government enquiries and transactions.

Jobs benefits

The NBN is the national infrastructure project that will form the basis of Australia's prosperity in the information economy. The government established NBN Co Limited to design, build and operate the nation's new high-speed* National Broadband Network, a process that will create jobs in upstream industries as new applications are developed to utilise the network, as well as create new jobs in related sectors supplying to NBN Co and its subcontractors in the construction, manufacturing, IT and telecommunications industries.

NBN Co projects that between 16 000 and 18 000 construction jobs alone will be created at the peak of the rollout. At 30 September 2011, NBN Co employed 1 170 people. This number is likely to grow to 2000 direct employees over the life of the rollout.

On 20 December 2010, the government publicly released its Statement of Expectations to NBN Co. The document highlighted the government's expectation that NBN Co will actively promote opportunities for small and medium enterprises to participate fully in this project in meaningful and continuing ways. In support of this, NBN Co is working with the Industry Capability Network—a government funded web portal set up to put builders of major projects and buyers of industry goods and services in touch with potential suppliers—to help regional businesses find contracts within the project.

Australian companies have already been contracted to assist with the rollout of the NBN. On 17 January 2011, NBN Co awarded three equipment contracts worth over \$1.6 billion to Australian located companies to supply passive network infrastructure to build the NBN during the next five years. On 15 November 2011, NBN Co announced contracts worth up to \$635 million over the next five years to six companies operating in Australia to provide an array of equipment for installation in homes and businesses as part of an NBN connection. Corning Cable Systems, which was awarded an equipment contract with NBN Co, is also

³⁰ PricewaterhouseCoopers, *The Economic Case for Digital Inclusion*, October 2009, p.47, see www.parliamentandinternet.org.uk/uploads/Final_report.pdf

expected to add 300 to 400 new staff over the next couple of years as a result of its NBN deal.

NBN Co has also recently entered into a number of significant construction agreements which pave the way for the large scale deployment of NBN optic fibre. For example:

- in June 2011 NBN Co entered into a ten-year contract with Ericsson (which already has a large Australian presence) worth up to \$1.1 billion to design, build and operate a 4G fixed-wireless network to serve premises outside the fibre footprint in regional and rural Australia
- in June 2011, NBN Co signed construction contracts with Silcar to begin rolling out the NBN in Queensland, New South Wales and the ACT
- in September 2011, NBN Co announced agreements with Transfield Services for the rollout of the NBN in Victoria, and Syntheo (a Lend Lease/Service Stream joint venture) for work in Western Australia
- in November 2011, NBN Co signed construction contracts with Syntheo to begin rolling out the NBN in South Australia and the Northern Territory.

The process adopted by NBN Co to engage multiple contractors and civil works vendors in a project of this scale, 'help[s] create competitive tension between suppliers to drive productivity improvements and bring costs down'.³¹

The rollout of the NBN will also provide opportunities for upstream industries, for example, the NBN has stimulated job growth in the research and development sector. The Institute for a Broadband Enabled Society, a cross-disciplinary research institute dedicated to products, services, and innovations that maximise the benefit of new broadband technologies to Australian society, was established in 2009 in the wake of the NBN announcement. This institute grants PhD scholarships and employs researchers such that in 2010-11, 169 Melbourne University researchers and 46 external collaborators contributed to the Institute's research.

The government is also committed to ensuring there is a well trained and accredited workforce for Australia's largest infrastructure project. The Department of Employment, Education and Workplace Relations (DEEWR) is working with the Department of Broadband, Communications and the Digital Economy (DBCDE) and industry stakeholders including NBN Co to identify the employment opportunities for job seekers associated with the NBN rollout.

DEEWR will support NBN Co to bring together Second Release Site Principal Contractors, State Government and Commonwealth representatives, including Local Employment Coordinators and Regional Education, Skills and Jobs Coordinators, to develop a coordinated state and regional approach to working together. This will ensure that employment and

³¹ NBN Implementation Study p.40, see http://www.dbcde.gov.au/data/assets/pdf_file/0020/127550/NBN-Implementation-Study-complete_report.pdf

training opportunities created by the NBN rollout are identified and can be maximised for job seekers and existing workers.

In addition, in support of the Definitive Agreements between Telstra and NBN Co, the government has entered into an agreement with Telstra to provide funding of \$100 million to assist it in the retraining and redeployment of Telstra staff affected by reforms to the structure of the telecommunications industry, including to enable their transition to employment in deploying and supporting a fibre network.

The funding will ensure that Telstra's workforce, including technicians and engineers, is appropriately skilled. This will contribute to the level of skilled and experienced workers available for the rollout of the NBN.

Under the Retraining Deed, Telstra will give priority to retraining staff who currently work on the copper and hybrid fibre-coaxial (HFC) networks and staff whose roles are linked to supporting the copper and HFC networks, including the wholesale copper workforce and the direct field support workforce. Telstra will give priority to retraining these employees in NBN related technical, process and system activities.

The rollout of the NBN will also assist in developing new and wider workforce opportunities in regional areas in the sectors of health and education, and with the greater use of new online markets. In the health sector, the growth of the digital economy is providing new opportunities to train world class doctors for regional Australia. The University of New England's (UNE) partnership with University of California's Irvine School of Medicine will connect health care professionals in regional areas with world class medical teaching institutions via broadband to share teaching resources and share simulation facilities.³² Fast broadband enables high-speed data exchange, meaning health care students will now have access to resources that would otherwise be impossible to access in regional Australia.³³

Competition benefits

One of the government's key policy objectives in establishing the NBN is to address the structural problems in the Australian telecommunications industry which have hindered the development of effective competition and better outcomes for consumers.

By establishing the NBN as an open access platform and providing uniform national wholesale pricing the government has enabled the telecommunications sector to provide more competitive and innovative services to Australian consumers. The structural separation of Telstra's copper customer network and its HFC network will be achieved through Telstra's Structural Separation Undertaking and Migration Plan (subject to approval by the ACCC) and the progressive migration of customer services to the NBN. As Graeme Samuel, then ACCC Chairman, confirmed in a speech delivered in April 2011, 'this provides the opportunity to

³² Deloitte Access Economics, The connected continent: How the internet is transforming the Australian Economy, August 2011, p.22 see <http://www.deloitte.com/au/connectedcontinent>

³³ Ibid.

remedy the errors of the past, reshape the industry and ensure that the underlying structural foundations encourage investment and competition as we transition to the NBN'.³⁴

As a result, Australia will have a wholesale-only fibre network that will connect homes and businesses across the country. This network will not be controlled by any retail company. The resulting separation between the network provider and retail providers will mean better and fairer access for service providers, regardless of size, and greater retail competition and better services for consumers and businesses.

To ensure that there is robust retail competition, the NBN is subject to company-specific legislation to ensure it operates now and into the future on an open-access, non-discriminatory and wholesale only basis and that it is subject to close scrutiny by the ACCC. As Graeme Samuel said 'As we transition to the NBN the framework is now in place to make a major break from the past and remove underlying structural impediments to investment and competition development in the telecommunications industry. The structural separation of Telstra and NBN Co being a wholesale only provider could go a long way towards delivering the more competitive telecommunications sector that was envisaged when the industry was first opened up to competition'.³⁵

The competitive benefits of the NBN are emerging. As Australia's first national, wholesale-only, open access fixed-line network, the NBN will provide a platform for more vigorous competition between retail service providers, leading to better and more choice for consumers and businesses. Australia's prices are currently high by international standards.³⁶ Strong retail competition will put downward pressure on prices.

On 30 November 2011, following extensive consultation with industry, NBN Co released an executable version of its Wholesale Broadband Agreement (WBA). As of December 2011, Aardvark Internet, AARNet, Ace Internet Services, Adam Internet, Club Telco, Eftel, Engin, EscapeNet, Exetel, iiNet, Internode, Internet Solutions, iPrimus, mVoice, North Queensland Telecom, NuSkope, Optus, Redback Communications, Rivertel, SkyMesh, Telstra and Westnet were listed on NBN Co's website³⁷ as active certified service providers in first release sites and new developments. Many of these certified service providers have signed or are now signing NBN Co's WBA.

Retail service providers have publicised attractive pricing packages for the NBN-based services, including those announced by Exetel, Internode, iiNet, iPrimus and Optus. These prices compare very favourably with prices in the market for similar products particularly noting that NBN-based services do not require payment of additional line rental fees, offer

³⁴ Graeme Samuel, Chairman, ACCC, ATUG 2011 annual conference, 'Telecommunications regulation: the new paradigm' p.10, see <http://www.accc.gov.au/content/index.phtml/itemId/980976>

³⁵ Ibid p.11

³⁶ OECD Broadband Portal, Chart 4e. Average monthly bit/data limits, by country, September 2010, see http://www.oecd.org/document/54/0,3343,en_2649_34225_38690102_1_1_1_1,00.html

³⁷ See www.nbnco.com.au/getting-connected/certified-service-providers.html

superior performance with the option to upgrade to faster speeds not available over the copper network and that some providers include access to telephony at no extra cost or for a small additional fee that typically includes phone calls.

Such pricing includes, for example:

- Exetel, offering a basic 12/1 Mbps* plan with a 20 Gigabit (GB) data limit for \$35.00 per month, which includes access to a VoIP telephone service. Exetel's top-of-the-range plan with 100/40 Mbps* speed with a 150 GB limit costs \$60.00 per month.³⁸
- Australia's second biggest DSL provider³⁹, iiNet, has a range of offers from a basic 12/1 Mbps* plan with a 40 GB (20GB peak + 20GB off-peak) data limit for \$49.95 per month up to a high end 100/40 Mbps* plan with 1,000 GB (500GB peak + 500GB off-peak) data limit for \$99.95 – all plans can be upgraded to include a VoIP service for an additional \$9.95 per month, which includes all local and national calls⁴⁰; and
- Optus is offering a range of packages including a basic 12/1 Mbps* plan with a 40 GB (20GB peak + 20GB off-peak) data limit for \$39.99 per month when bundled with a \$19 per month mobile phone plan – Optus also offers 12/1 Mbps* plan with a 120 GB (50GB peak + 70GB off-peak) data limit and home phone, including \$30 worth of calls, for \$64.94 per month.⁴¹

On 18 October 2011, WhistleOut⁴², a comparison website, released its analysis of NBN-based prices versus ADSL2+ prices. This analysis concluded that users could pay up to 43 per cent less for a broadband service deployed over the NBN than what they pay today for an ADSL2+ service in the 200 GB to 1000 GB per month data allowance range. We are seeing evidence that the NBN is welcomed with NBN Co expecting the majority (52 per cent) of residential consumers who sign up to broadband plans in the 2012 financial year to take up retail services based on NBN Co's entry-level wholesale 12/1* Mbps service.⁴³

The government's objective is that the NBN will provide access to high-speed*, affordable broadband for all Australians. The NBN has the potential to advance competition in the telecommunications sector by creating a wholesale-only high-speed broadband network that all providers may access on equal terms.

A strong wholesale aggregator market is already emerging to take advantage of the NBN. Nextgen Networks and ISPone are already offering services, and companies such as AAPT, Platform Networks, Optus and Telstra are expecting to offer services. These intermediary

³⁸ See www.exetel.com.au/residential-fibre-pricing-mainland.php (accessed 10 February 2012).

³⁹ See www.iinet.net.au/about/

⁴⁰ See www.iinet.net.au/nbn/nbn-plan-residential.html (accessed 13 January 2012).

⁴¹ See

http://personal.optus.com.au/web/ocaportal.portal?nfpb=true&pageLabel=Template_worHS&FP=/personal/internet/NBN&site=personal

⁴² See www.whistleout.com.au/blog/nbn-pricing-analysis-vs-adsl-2

⁴³ NBN Co Corporate Plan 2011-2013, p.118, see www.nbnco.com.au/assets/documents/nbn-co-3-year-gbe-corporate-plan-final-17-dec-10.pdf.

wholesale providers are developing products for retail service providers, particularly smaller providers, by integrating products and reducing costs through aggregating services.

In June 2011 Nextgen Networks announced⁴⁴ its NBN Connect product, which offers wholesale Virtual ISP Service to small and medium consumer and business service providers. Nextgen Networks also expects its service will be used by larger service providers, particularly in the early rollout stages of the NBN.

On 5 December 2011, NBN Co submitted a special access undertaking (SAU) to the ACCC. Within this document, NBN Co has proposed a regulatory framework for it to establish the price and non-price conditions required for its investors to recover rollout costs. The document also provides details of the ACCC's oversight role. The ACCC has initiated a public consultation process and will consider whether or not to accept NBN Co's SAU.

Operating as a wholesale-only provider, NBN Co will solve the current structural issues in the telecommunications sector where one provider owns the only ubiquitous fixed-line network in Australia and competes against its wholesale customers in downstream retail markets.

Maintaining a clear distinction between the separate roles of the NBN and service providers will deliver better and fairer access for service providers, greater retail competition and better services for consumers and businesses.

- Points of Interconnect

The government is determined to create an NBN that promotes competition, optimises NBN Co's network design, gives opportunities for smaller providers and delivers sustainable uniform wholesale pricing for the benefit of users in regional, rural and remote Australia. NBN Co and the ACCC have a role in promoting sustainable competition, and have demonstrated this with advice in relation to where to locate and the number of Points of Interconnect (POIs). In considering this network structure issue and the ACCC's analysis, the government was seeking to optimise retail and infrastructure based competition and to ensure national uniform wholesale pricing could be delivered.

POIs are locations where traffic is exchanged between one network and another. The number and placement of POIs is important in determining the cost structure of competing access seekers or retail services providers.

In 2010, the government requested the ACCC and NBN Co to undertake a process, including public consultation, on the number and location of initial POIs for the NBN that would best meet the long-term interests of end-users. In response, the ACCC advised the government that the semi-distributed model of approximately 121 POIs would best promote retail and wholesale competition across all geographic markets.

⁴⁴ See www.nextgennetworks.com.au/LinkClick.aspx?fileticket=1R_BWWnL2is%3D&tabid=65&mid=450

The ACCC concluded the semi-distributed model will result in:

- ‘POIs being established in all locations where transmission services are workably competitive and it is technically and operationally feasible’,⁴⁵ and
- ‘the most efficient use of existing infrastructure and will minimise the amount of stranding of competitive transmission assets that will occur through the transition from copper to fibre’.⁴⁶

In supporting the semi-distributed model, recommended by the ACCC, the government was seeking a balance between:

- NBN Co optimising its network design and technical operation with a view to reducing its costs and maximising its ability to deliver uniform national wholesale pricing; and
- minimising the disruption to existing investment in competitive backhaul and thereby leveraging competition in the supply of such backhaul to put downward pressure on backhaul prices and, by keeping backhaul prices relatively low (and thus a small proposition of overall costs), supporting uniform national retail pricing overall.

The semi-distributed POI model enables small providers to service a discrete area using a limited number of POIs. For example, each POI will service around 80 000 to 100 000 premises. Providers wanting to deliver direct services nationally will need to interconnect with all POIs. Smaller broadband providers not wanting to interconnect with all POIs can use a wholesale aggregator to provide services over a wider area of the NBN. There is already a strong wholesale aggregator market emerging providing backhaul and other services to small providers who wish to compete on a wider scale. For example, as NBN Co announced on 1 September 2011, Townsville-based service providers Internet Solutions and North Queensland Telecom have started connecting some of their customers to the NBN via NBN Co customer and wholesaler Nextgen Networks.⁴⁷ This illustrates the potential competitive benefits to the telecommunications sector of having an open access network like the NBN.

A number of service providers have signed up to the NBN trial to offer ready-made services to smaller retail service providers for them to resell to consumers and businesses. This means that small, or even some larger service providers, have the potential to enter parts of the telecommunications market with a reduced requirement to invest in their own infrastructure to interconnect with the NBN. Such flexibility has the potential to support a range of wholesale and retail business models and is expected to facilitate lower barriers to entry for service providers and to open up competition – both in major centres and in regional areas

⁴⁵ ACCC Advice to Government National Broadband Network Points of Interconnect, p.41-42, see <http://www.accc.gov.au/content/item.phtml?itemId=963436&nodeId=128cca6c23842d65726b861f88d6a490&fn=ACCC%20Advice%20on%20NBN%20POIs%20Nov2010%20PUBLIC.pdf>

⁴⁶ Ibid, p.62

⁴⁷ See <http://www.nbnco.com.au/assets/media-releases/2011/local-isps-join-the-nbn-in-townsville-01-sep-11.pdf>

like North Queensland. This flexibility will in turn support the critical role of the fixed network in meeting growth in demand for data transmission.

The government has set itself a goal of making Australia one of the world's leading digital economies by 2020. This goal will be achieved by the productivity, jobs and competitive benefits delivered by the NBN. In 2020 Australia will rank in the top five OECD countries in terms of businesses and not-for-profit organisations using high-speed broadband to drive efficiency and productivity improvements; expand their customer base and enable growth. The NBN will provide equitable outcomes for Australians in regional, rural and remote Australia and improve access to business and job opportunities, health services, education, social and government services.

Recommendation 5

The Committee recommends that 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 the transition to the NBN on currently available levels of service for satellite technology; and**
- **taking into consideration findings of this investigation, formulate contingency plans against potential reduction of capacity in regional and remote areas as a consequence of the NBN rollout, if required.**

The government supports these recommendations in principle.

Rollout Timeframes

On 18 October 2011, NBN Co released its first 12-month national construction rollout plan. The schedule lists the communities in each state and territory where work on the fibre network will begin before September 2012. This marks the end of the NBN trial phase and the beginning of the volume rollout to Australian premises.

In the year to September 2012 NBN Co will have started construction on a high-speed* fibre network to nearly half a million Australian premises.

The schedule includes 28 newly-released sites across the country as well as locations containing over 63 000 premises where work is currently underway, including second release sites, such as Geraldton, Western Australia and extensions of first release sites such as Townsville, Queensland. The time taken from start of construction to services being available is about 12 months. The schedule will be updated each quarter to include new locations.

The 12-month national rollout plan and more detailed information is available at www.nbnco.com.au/our-network/rollout-plan.html

In the first quarter of 2012 NBN Co will also issue its first three-year indicative schedule of the rollout, which will be updated annually until the rollout is complete.

Service levels supported over NBN Co's long term satellite service

NBN Co's leading edge satellite services will represent a step change, both in terms of speed and reliability, compared with existing satellite services.

The services will be significantly better for the 3 per cent of Australians in remote areas receiving services from the satellite broadband network. Applications that are utilised by satellite users today, such as the NT School of the Air will be supported over the long term

satellite service that will offer vastly improved services to residential and small business users and commercial grade services.

Residential and small business grade satellite services are currently typically provisioned at 10 kilobits per second (Kbps) average busy hour throughput.

NBN Co's interim satellite service is offering NBN Co's retail service provider customers broadband speeds of up to 6 Mbps downlink and 1 Mbps uplink* and 30 Kbps average busy hour throughput at the wholesale level.

The interim satellite service has been well received with many end users providing positive feedback on the standard of equipment and the quality of service received from NBN Co. One Whirlpool user commented that 'As anticipated, the NBN first release satellite service has been an absolute model of reliability and consistency'.

For the long term satellite service, designed to offer NBN Co's retail service provider customers broadband speeds of up to 12 Mbps downlink and 1 Mbps uplink* at the wholesale level, NBN Co anticipates that the service will support average busy hour throughput speeds of 300 Kbps at the wholesale level.

The new satellites will have multiple focused high-capacity beams that maximise spectral usage. NBN Co will also use the next generation of ground equipment and acceleration techniques to maximise performance.

NBN Co has also recently provided more detail about the capabilities of the long-term satellite service in relation to e-health services which demonstrates just what a step-change in experience its long term satellite service will offer to end users.⁴⁸ For example, it will be able to support content streaming and applications such as delivering training videos for remote health certification.

NBN Co's long term satellite product roadmap will include various features such as increased capacity and return path speeds that are designed to support large file transfers and real time video communications.

Over time, it is expected that further services will be supported as NBN Co upgrades its networks and through other technological improvements. There is no expected reduction in capacity in regional areas as a result of the NBN rollout, but rather an expectation of significant improvement in capacity. It is unlikely that current commercial services will be withdrawn in advance of the rollout because demand for these services is expected to only

⁴⁸ Refer to NBN Co's response to JCNBN Question on Notice 5 from the 20 September 2011 hearing available at http://www.aph.gov.au/Parliamentary_Business/Committees/House_of_Representatives_Committees?url=jcnbn/submissions.htm

increase as regional and rural Australians use of broadband technologies increases.⁴⁹ These communities will be able to take advantage of the increased capabilities offered by the long term satellite service.

* NBN Co is designing the NBN to be capable of delivering these speeds to NBN Co's wholesale customers (RSPs). Speeds actually achieved by retail customers (end users) will depend on a number of factors including the quality of their equipment and in-premises connection, the broadband plans offered by their RSP and how their RSP designs its network to cater for multiple end users.

⁴⁹ According to the Australian Bureau of Statistics *Household use of Information Technology Survey, Australia, 2010-11* released 15 December 2011, non-metropolitan broadband access increased by 15 per cent to 68 per cent of all non-metropolitan households over the past two years, compared to the 10 per cent increase in capital city households to 76 per cent over the same period. Survey available at <http://www.abs.gov.au/ausstats/abs@.nsf/Latestproducts/8146.0Media%20Release12010-11?opendocument&tabname=Summary&prodno=8146.0&issue=2010-11&num=&view=>